



REPORT

ON THE

Health of the County Borough of
Belfast, for the Year 1929,

BY THE

Medical Superintendent Officer
of Health
And Colleagues.

Belfast :

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FOR THE YEAR 1929.


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The Medical Superintendent Officer of Health for the City

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County Borough of Belfast.

PUBLIC HEALTH COMMITTEE,
1929.

Chairman:

Alderman J. DUNLOP WILLIAMSON, M.D., J.P.

Vice-Chairman:

Councillor WALTER FRANCIS CLOKEY.

Aldermen:

JAMES ARCHIBALD DORAN, J.P.

JOHN GRAHAM.

HENRY MIDGLEY.

JULIA M'MORDIE, C.B.E., J.P.

JAMES DUNLOP WILLIAMSON, M.D., J.P.

Councillors:

WALTER FRANCIS CLOKEY.

JAMES CRAIG, J.P.

FRANCIS JAMES HOLLAND.

THOMAS HENDERSON, M.P.

JAMES KILPATRICK.

JOSEPH MAGUIRE.

SAMUEL McLOUGHLIN.

CAPTAIN JOSEPH DALLAS

NICHOLL, M.C.

CLARKE SCOTT.

WILLIAM JAMES WILLIAMSON.

STAFF

(1st January)

- 1 Chief Clerk.
- 1 Clerk, Notification of Deaths, etc.
- 2 Clerks, Infectious Disease.
- 5 Clerks of Divisions.
- 2 Clerks under Maternity and Child Welfare Scheme.
- 2 Shorthand Writers and Typists.
- 4 Divisional Inspectors.
- 4 Inspectors under the Sale of Food and Drugs Acts.
- 3 Inspectors under the Factory and Workshop Act (1 male and 2 females).
- 1 Inspector of Dairies and Cowsheds.
- 1 Inspector of Milkshops.
- 1 Inspector of Lodging Houses.
- 1 Port Sanitary Inspector.
- 1 Inspector in Charge of Infectious Disease Staff.
- 4 Assistant Disinfectors (including one qualified Inspector).
- 14 District Inspectors.
- 4 Drain Testers' Assistants.
- 12 Health Visitors.
- 1 Do. Inspector as Superintendent of Midwives.
- 1 Notice Server.
- 1 Messenger and Time Clerk.
- 4 Employed at Disinfecting Station (3 males and 1 female).
- 1 Disinfectant Storeman.

COUNTY BOROUGH OF BELFAST—1929.

Summary of Vital Statistics.

Area (Census 1926) (Exclusive of 1,723 acres of tidal water)	14,797 acres
Population (Census 1926)	415,151
Number of Houses in the City	89,774
Number of Inhabited Houses (Census 1926)	82,638
Number of Uninhabited Houses (Census 1926)	1,714
Number of Families or Separate Occupiers (Census 1926)	89,724
Average Number of Persons per Family (Census 1926)	4.58
Density	28.1 persons to an acre.
Length of Public Streets	Streets classified as I. II. or III. under Ministry of Home Affairs Road Classification Scheme—272 miles 1,041 yards.
	Back streets and passages repairable by the Corporation and used for vehicular traffic—65 miles 929 yds.
Rateable Value	£1,832,582
1d. Rate produces	£7,000
Cost of Public Health Services	£61,714/10/5
Marriages	3,170
Marriage Rate	7.6
Live Births (registered)	8,899 (Reg. General)
Still Births (not registerable but notifiable)	256
Live Births (notified)	9,079
Birth Rate	21.4
Birth Rate average for the last ten years	24.5
Deaths	6,462
Death Rate	15.6
Death Rate average for the last ten years	14.7
Deaths of Infants under one year of age	1,000 (Reg. General)
Infant Mortality Rate	112 deaths per 1,000 births
do. —Legitimate	(Information not available for 1929 but will be available for 1930).
do. —Illegitimate	
Average for the last ten years	108 deaths per 1,000 births.
Number of Women dying in, or in consequence of childbirth—	
From Sepsis	11 } (Notifications of Deaths—Not
Other Causes	29 } Registrar-General's figures.)
Deaths from Zymotic Diseases	395
Zymotic Death Rate	0.9
Deaths from Measles	77
Deaths from Whooping Cough	138
Deaths from Diarrhoea and Enteritis under 2 years of age	149
Deaths from Phthisis	485
Death Rate do.	1.2
Total Deaths from Chest Affections	1,926
Death Rate do. do.	4.6

*To the Right Honourable the Lord Mayor, the Aldermen and Councillors of the
Belfast County Borough.*

My Lord, Ladies and Gentlemen,

I have the honour to present to you my first Annual Report as Medical Superintendent Officer of Health for Belfast.

In a letter to your esteemed Authority dated 13th January, 1930, the Ministry of Home Affairs drew attention to Article 14 (13) of the Sanitary Order No. 4, made by the Local Government Board for Northern Ireland.

Under the Article the Medical Superintendent Officer of Health for Belfast is required to make an annual report each year to the Belfast County Borough Council.

The Ministry's letter said that "the usefulness of this Report would be increased if, in future years, it were drawn up in the form prescribed by the Ministry of Health in England. The following of such a model would, in the Ministry's opinion, ensure that the Report would be thoroughly comprehensive and that no aspect of public health would be overlooked."

Accompanying the Ministry's letter were sixteen typed sheets on which were given questions for answer relating to every subject coming within the ambit of Public Health.

It is intended that this year's annual report should be a foundation upon which to build from year to year; consequently in laying the foundation, it has been necessary to deal with certain subjects at some length.

In future years it is hoped that briefer reference only will require to be made to such subjects.

It would doubtless be of interest if I were to express my opinion, the impressions of a newcomer, concerning the City of Belfast from a Public Health point of view. This opinion is based not only on my personal observations of the City, but upon my previous knowledge and experience of English towns and cities. Belfast is fortunate; it has no serious slum problem, an anxiety which many less fortunate cities elsewhere have before them. Again, the City has no serious Housing question—though one has to be careful what this expression means. It is quite true that houses, like human beings, grow older and therefore require increasing attention with age; in this respect we have our share. The record of work done in this connection will be found in the report. Another aspect of the Housing question is that of overcrowding. The Ministry asks for particulars as to "Social Conditions," a subject that involves a consideration of overcrowding. I have dealt with the matter not only from the Registrar-General's census of 1926 but also from the experiences of the Staff in their daily work. Here it may be said that so far as our experiences have gone during 1929, overcrowding is relatively small, though there are some bad cases.

The City is fortunate in its large number of parks and open spaces, health promoting agencies of the highest order.

On these grounds I suggest that with steady attention to the principles and practice of Public Health, domestically as well as municipally, we will soon take an even more prominent place.

It is by education and again by education, that we can teach people to help in applying the laws of health. We look forward to holding a Health Week, say every two years, to the use of films, and to the introduction of such an instructive monthly periodical as "Better Health," a magazine to be found now in many cities and towns.

In concluding this introductory article I would draw attention to the appendix: this will help readers to find any subject in which they may be specially interested. It has not been possible to include every subject one would have wished to deal with, but a beginning has been made. Herein will be found reports by my colleagues on their special subjects. It would occupy far too much space to name those and all the members of the Staff to whom I owe so much for their kindness and loyal support. Dr. J. D. Williamson, Sir Robert Meyer, Mr. Archer, and Dr. Samuel Barron have been pillars of strength, whilst the co-operation of Mr. Donald, City Surveyor (whose department is closely allied to the Health department), has been splendid.

The Public Health Department is a solid, unified whole and each member thereof faces the future with quiet confidence.

On their behalf I extend to you our grateful thanks for your kindness and support.

I have the honour to remain,

My Lord, Ladies and Gentlemen,

Your obedient Servant,

CHARLES S. THOMSON,

Medical Supt. Officer of Health.

BIRTHS.

8,899 births were registered during the year, equivalent to a birth rate of 21.4 per 1,000 of the population. This is a decrease of 1.1 per 1,000, compared with the preceding year, when the number registered was 9,356, and the rate 22.5

The average number registered annually during the ten years, 1919-1928, was 10,511, and the average annual birth rate 24.9.

The following shews the number of births, the percentage of the total number registered during the year, and the annual birth rate per 1,000 of the population in each of the four quarters of the year:—

	No. of Births	Percentage of Total No.	Birth Rate
First Quarter	2,267	25.5	21.9
Second Quarter	2,432	27.3	23.4
Third Quarter	2,210	24.8	21.3
Fourth Quarter	1,990	22.4	19.2

Table No. 4 shews the number of births in each of the several Dispensary Districts.

DEATHS.

6,462 deaths were registered from all causes during the year, equivalent to a death rate of 15.6 per 1,000 of the population, an increase of 1.6 per 1,000 compared with the preceding year, when the number registered was 5,804, and the rate 14.0

The average number registered annually during the ten years 1919-1928 was 6,310, and the average annual death rate 15.0

The following shews the number of deaths, the percentage of the total number registered during the year, and the annual death rate per 1,000 of the population in each of the four quarters of the year:—

	No. of Deaths	Percentage of Total No.	Death Rate
First Quarter	2,779	43.0	26.8
Second Quarter	1,359	21.0	13.1
Third Quarter	1,095	16.9	10.6
Fourth Quarter	1,229	19.0	11.8

TABLE No. 1.

Shewing the number of deaths, the percentage of the total number registered, and the death rate per 1,000 of the population at various age periods compared with the year 1928.

	1929			1928		
	No. of Deaths	Percentage of total Deaths Registered	Death Rate per 1,000 of the population	No. of Deaths	Percentage of total Deaths Registered	Death Rate per 1,000 of the population
Under 1 year	1,000	15.5	2.4	960	16.5	2.3
1 year and under 5 years	597	9.2	1.4	525	9.0	1.3
5 and under 25 years	499	7.7	1.2	469	8.1	1.1
25 and under 45 years	800	12.4	1.9	722	12.4	1.7
45 and under 65 years	1,620	25.1	3.9	1,506	25.9	3.6
65 years and upwards	1,946	30.1	4.7	1,622	27.9	3.9

TABLE No. 2.

Shewing the number of deaths from various causes, together with the percentage of the total number registered and the death rate per 1,000 of the population.

Cause of Death.		1929			1928		
		No. of Deaths	Percentage of total Deaths Registered	Death Rate per 1,000 of the population	No. of Deaths	Percentage of total Deaths Registered	Death Rate per 1,000 of the population
Typhoid Fever	.....	4	0.06	0.01	13	0.22	0.03
Typhus Fever	.....	—	—	—	1	0.02	0.002
Smallpox	.....	—	—	—	—	—	—
Measles	.....	77	1.19	0.19	169	2.91	0.4
Scarlet Fever	.....	8	0.12	0.02	21	0.36	0.05
Whooping Cough	.....	138	2.14	0.33	50	0.86	0.1
Diphtheria	.....	19	0.29	0.05	16	0.28	0.04
Dysentery	.....	—	—	—	—	—	—
Influenza	.....	363	5.62	0.87	63	1.09	0.15
Diarrhœa—							
Under 2 years of age	.....	149	2.31	0.36	196	3.38	0.47
Tuberculous Diseases—							
Phthisis	.....	485	7.51	1.17	499	8.6	1.2
Other Forms	.....	97	1.50	0.23	114	2.0	0.3
Total Tuberculous Diseases		582	9.01	1.40	613	10.6	1.5
Diseases of the Respiratory System—							
Pneumonia	.....	680	10.52	1.64	521	9.0	1.26
Other	.....	761	11.78	1.83	542	9.3	1.3
Total Dis. Resp. System	.....	1,441	22.30	3.47	1,063	18.3	2.56
Total Chest Affections	.....	1,926	29.8	4.6	1,562	26.9	3.76
Cancer	.....	424	6.56	1.02	446	7.7	1.1
Violence	.....	137	2.12	0.33	123	2.1	0.3

TABLE No. 3.

Shewing the annual death rate per 1,000 of the population from all causes during the twenty years 1910-1929; also the average rate for quinquennial periods.

Year.	Rate.	Year.	Rate.
1910	18.6	1920	17.5
1911	17.2	1921	14.4
1912	18.1	1922	14.8
1913	18.8	1923	13.8
1914	18.9	1924	14.3
1915	17.9	1925	14.0
1916	16.7	1926	15.4
1917	16.7	1927	13.6
1918	22.7	1928	14.0
1919	17.9	1929	15.6

TABLE No. 4.

Shewing the number of Births registered in each of the several Dispensary Districts, also the number of deaths of Infants under 1 year old.

DISTRICT		BIRTHS				DEATHS
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Under 1 Year
No. 1	.....	118	111	104	86	65
„ 2	.....	262	264	256	233	140
„ 3	.....	274	322	269	287	100
„ 4	.....	162	190	182	160	108
„ 5	.....	120	137	128	84	78
„ 6	.....	148	140	134	107	34
„ 7	.....	26	16	18	21	11
„ 8	.....	32	42	42	43	14
„ 9	.....	180	190	176	144	76
„ 10	.....	201	215	178	174	89
„ 11	.....	183	206	174	159	48
„ 12	.....	157	157	141	117	89
„ 13	.....	125	139	112	104	33
„ 14	.....	—	—	—	1	—
„ 15	.....	153	154	162	133	70
„ 16	.....	126	149	134	137	45
Total	.....	2,267	2,432	2,210	1,990	1,000

TABLE No. 5

Shewing the Population, the number of Births, the Birth Rate per 1,000, the number of Deaths, the Death Rate per 1,000, and the natural increase during the forty-nine years 1881-1929.

Year	Population	No. of Births	Birth Rate per 1,000	No. of Deaths	Death Rate per 1,000	Natural Increase
1881	207,671	6,942	33.4	4,911	23.6	2,031
1882	207,671	6,820	32.8	5,365	25.8	1,455
1883	214,022	6,694	31.3	5,600	26.2	1,094
1884	216,622	7,231	33.4	5,073	23.4	2,158
1885	219,222	7,161	32.7	6,127	27.9	1,034
1886	221,822	7,344	33.1	5,256	23.7	2,088
1887	224,422	7,502	33.5	5,807	25.9	1,695
1888	227,022	7,719	34.0	5,742	25.3	1,977
1889	229,622	7,705	33.6	5,921	25.8	1,784
1890	232,222	8,250	35.5	6,861	29.5	1,389
1891	255,922	8,650	33.8	6,537	25.5	2,113
1892	261,046	8,592	32.9	6,910	26.5	2,166
1893	275,000	9,399	34.2	6,848	24.9	2,551
1894	285,000	9,349	32.8	6,615	23.2	2,734
1895	295,000	9,772	33.1	7,168	24.3	2,604
1896	300,000	10,378	34.5	6,953	23.2	3,425
1897	310,000	10,481	33.3	7,225	23.3	3,256
1898	340,000	11,234	33.0	7,768	22.8	3,466
1899	350,000	11,437	32.7	7,933	22.7	3,504
1900	359,000	11,192	31.2	7,642	21.3	3,550
1901	350,862	10,859	30.9	7,738	22.4	3,121
1902	360,000	11,113	30.5	7,577	20.8	3,536
1903	360,000	11,488	32.0	7,169	20.0	4,319
1904	360,000	11,323	31.6	7,474	20.8	3,849
1905	360,000	11,395	31.8	7,178	20.0	4,217
1906	366,220	11,355	31.0	7,379	20.1	3,976
1907	370,163	11,233	30.3	7,870	21.3	3,353
1908	380,344	11,490	29.7	7,523	19.5	3,967
1909	386,576	10,900	28.2	7,028	18.2	3,872
1910	391,167	10,888	27.8	7,284	18.6	3,604
1911	386,449	10,984	28.4	6,645	17.2	4,339
1912	391,974	10,884	27.8	7,111	18.1	3,733
1913	396,000	10,996	27.8	7,453	18.8	3,543
1914	399,000	11,337	28.0	7,663	18.9	3,674
1915	403,000	10,196	25.3	7,220	17.9	2,976
1916	390,000	9,415	24.1	6,496	16.7	2,919
1917	393,000	8,718	22.2	6,557	16.7	2,161
1918	393,000	9,282	23.6	8,920	22.7	362
1919	401,000	10,464	25.7	7,278	17.9	3,186
1920	413,000	12,144	29.4	7,234	17.5	4,910
1921	420,000	11,043	26.3	6,045	14.4	4,998
1922	425,000	10,667	25.1	6,304	14.8	4,363
1923	429,000	10,746	25.0	5,910	13.8	4,836
1924	434,000	10,594	23.9	6,329	14.3	4,265
1925	438,000	10,234	23.4	6,131	14.0	4,103
1926	416,000	10,356	24.9	6,411	15.4	3,945
1927	416,000	9,509	22.9	5,653	13.6	3,856
1928	415,151	9,356	22.5	5,804	14.0	3,552
1929	415,151	8,899	21.4	6,462	15.6	2,437

TABLE No. 6.

Shewing the Annual Birth and Death Rates per 1,000 of the population of the principal Urban Sanitary Districts of Ireland.

Urban District.	Births	Deaths from	
		All Causes.	Zymotic Diseases.
Belfast	21.4	15.6	1.0
Dublin (City)	27.4	16.6	1.0
Dublin Registration Area	25.1	16.2	0.9
Cork	20.9	16.7	1.4
Londonderry	25.3	14.1	0.9
Limerick	28.2	16.6	1.0
Waterford	23.2	17.0	2.3
Galway	22.8	14.8	0.4
Dundalk	17.3	12.5	0.9
Lurgan	22.5	16.4	0.3
Drogheda	26.0	17.0	0.8
Lisburn	23.7	13.1	1.2
Newry	23.7	15.4	1.4
Portadown	26.7	14.1	0.8
Wexford	24.3	15.4	0.5
Ballymena	22.3	15.6	0.5
Newtownards	19.3	17.1	2.5
Sligo	21.2	11.0	0.4
Kilkenny	23.5	15.4	1.0
Tralee	18.3	12.3	0.6
Clonmel	21.3	12.5	0.0

TABLE No. 7.

BELFAST.		WEEK ENDING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		Jan. 5.	Jan. 12.	Jan. 19.	Jan. 26.	Feb. 2.	Feb. 9.	Feb. 16.	Feb. 23.	Mar. 2.	Mar. 9.	Mar. 16.	Mar. 23.	Mar. 30.	Apr. 6.	Apr. 13.	Apr. 20.	Apr. 27.	May 4.	May 11.	May 18.	May 25.	June 1.	June 8.	June 15.	June 22.	June 29.	July 6.	July 13.	July 20.	July 27.	Aug. 3.	Aug. 10.	Aug. 17.	Aug. 24.	Aug. 31.	Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.	Dec. 7.	Dec. 14.	Dec. 21.	Dec. 28.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Number of Weeks in Annual Series		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Births registered		184	181	168	182	179	184	144	192	167	215	166	163	142	163	221	222	193	203	179	162	160	206	190	172	182	179	183	163	185	187	156	229	132	151	178	160	159	138	199	160	157	144	161	141	156	155	145	173	166	187	134	111																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Number of Deaths		151	188	186	361	420	314	244	204	148	144	163	139	117	132	115	106	124	108	110	97	106	89	114	77	85	96	100	72	90	91	82	79	76	84	90	78	77	94	82	104	93	89	93	105	87	90	109	98	94	81	84	102																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Annual Death-rate per 1,000		19.0	23.6	23.4	45.3	52.8	39.4	30.6	25.6	18.6	18.1	20.5	17.5	14.7	16.6	14.4	13.3	15.6	13.6	13.6	12.2	13.3	11.2	14.3	9.7	10.7	12.1	12.6	9.0	11.3	11.4	10.3	9.9	9.5	10.6	11.3	9.8	9.7	11.8	10.3	13.1	11.7	11.2	11.7	13.2	10.7	11.3	13.7	12.3	11.8	10.2	10.6	12.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Ages	Under 1 year	23	29	25	38	56	42	36	25	31	23	33	18	13	16	12	15	19	19	19	13	19	16	17	10	14	16	7	10	14	8	12	12	13	12	13	15	15	19	18	20	17	15	22	22	17	15	14	21	15	16	18	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	1—5 years	20	11	13	40	62	48	35	34	19	21	21	14	12	13	12	11	8	8	8	9	3	8	10	9	8	7	8	3	4	8	8	4	4	7	3	3	4	5	3	4	7	7	3	8	4	1	8	8	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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	25—45 "	18	21	27	46	34	25	22	21	23	22	16	23	8	15	12	17	19	17	11	14	17	10	20	15	15	14	14	9	10	15	9	15	4	12	16	7	11	7	13	15	11	12	7	12	9	17	8	18	8	13	14	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	45—65 "	33	60	54	78	101	63	44	39	35	34	33	38	37	26	36	24	31	29	25	21	29	24	26	21	22	28	28	20	26	28	24	21	23	27	25	21	20	27	15	28	26	24	26	23	26	25	35	21	21	20	16	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
65 and upwards	32	54	58	141	151	119	92	69	30	36	46	40	35	39	31	27	35	25	39	27	30	24	27	20	18	24	27	20	28	21	22	15	26	21	23	27	21	27	23	27	25	25	27	28	21	23	34	27	39	20	27	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Deaths from:—																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Enteric Fever		1	1	1	1

TABLE No. 8.

ANALYSIS OF DEATHS REGISTERED.

CAUSES OF DEATH.	AGE.																	SEX.		TOTAL.								
	Under 1 year.	1 year and under 2 years.	2 years and under 3 years.	3 years and under 4 years.	4 years and under 5 years.	Total under 5 years.	5 years and under 10 years.	10 years and under 15 years.	15 years and under 20 years.	20 years and under 25 years.	25 years and under 30 years.	30 years and under 35 years.	35 years and under 40 years.	40 years and under 45 years.	45 years and under 50 years.	50 years and under 55 years.	55 years and under 60 years.	60 years and under 65 years.	65 years and under 70 years.		70 years and under 75 years.	75 years and under 80 years.	80 years and under 85 years.	85 years and over.	Age not known.	Males.	Females.	
1. GENERAL DISEASES.																												
Common Infectious Diseases.																												
1. Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Typhoid Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Pyrexia (origin uncertain)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Scarlet Fever	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. Smallpox	...	...	...	...	...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Diphtheria	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8. Erysipelas	3	...	...	...	...	3	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9. Whooping Cough	66	39	20	8	5	138	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10. Measles	21	29	13	5	1	69	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11. Influenza	20	7	6	3	1	37	3	...	1	3	5	10	13	13	10	22	26	33	46	59	26	20	18	...	...	...	...
Total	111	77	40	16	7	251	14	...	2	6	5	11	14	13	11	22	27	33	47	59	28	21	18	256	326	582
12. Other Epidemic Diseases	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13. Purulent infection and septicaemia	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14. Tuberculosis of the lung	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Acute Miliary tuberculosis	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Tuberculous meningitis	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17. Abdominal Tuberculosis	7	9	3	3	...	26	5	4	1	5	2	2	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...
18. Other forms of tuberculosis	1	3	1	2	1	8	3	2	3	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19. Rickets	3	2	3	...	...	2	2	2	...	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20. Syphilis	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21. Cancer and other malignant tumors	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22. Other tumors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23. Acute articular rheumatism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24. Chronic rheumatism and gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25. Diabetes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26. Exophthalmic goitre	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27. Debility	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28. Leucæmia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29. Anæmia, chlorosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30. Other general diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31. Alcoholism (acute or chronic)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32. Chronic lead poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	18	20	13	10	10	71	22	30	73	96	89	79	60	87	81	118	110	102	66	59	31	18	6	535	663	1198

CAUSES OF DEATH.	AGE.																	SEX.		TOTAL.								
	Under 1 year.	1 year and under 2 years.	2 years and under 3 years.	3 years and under 4 years.	4 years and under 5 years.	Total under 5 years.	5 years and under 10 years.	10 years and under 15 years.	15 years and under 20 years.	20 years and under 25 years.	25 years and under 30 years.	30 years and under 35 years.	35 years and under 40 years.	40 years and under 45 years.	45 years and under 50 years.	50 years and under 55 years.	55 years and under 60 years.	60 years and under 65 years.	65 years and under 70 years.		70 years and under 75 years.	75 years and under 80 years.	80 years and under 85 years.	85 years and over.	Age not known.	Males.	Females.	
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SENSE																												
32a. Hydrocephalus	2	1	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4
33. Encephalitis	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	16	16
34. Meningitis { 1. Simple meningitis 2. Cerebro-spinal meningitis (undefined) 3. Cerebro-spinal fever	8	6	1	...	1	16	5	2	1	3	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	9	33	33

35. Locomotor ataxia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36. Other diseases of the spinal cord	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37. Cerebral hemorrhage, apoplexy	...	...	...	...	...	...	...	...	2	...	...	...	3	1	18	20	1	...	...	...	...	...	...	...	...	6	14	14
38. Softening of the brain	5	...	...	...	...	5	...	1	...	...	...	1	3	6	2	...	...	...	...	...	...	...	...	...	...	171	292	292
39. Paralysis without specified cause	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40. General paralysis of the insane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41. Epilepsy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42. Convulsions (non-puerperal)	...	1	...	...	...	1	...	...	2	1	2	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
43. Convulsions of infants	38	15	5	1	...	59	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44. Chorea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45. Neuralgia and Neuritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
46. Other diseases of the nervous system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
47. Diseases of the eyes	1	1	...	...	...	2	...	...	...	2	3	1	2	2	3	1	2	2	2	2	3	1	...	...	...	11	27	27
48. Diseases of the ears	...	2	...	...	...	2	1	3	1	3	2	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	15
Totals of nervous system, etc.	54	27	6	1	1	89	8	7	8	11	13	6	13	14	27	27	40	44	60	77	33	17	7	...	232	269	501	
III. DISEASES OF THE CIRCULATORY SYSTEM																												
49. Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
50. Acute endocarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
51. Organic diseases of the heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
52. Angina pectoris	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
53. Diseases of the Arteries, atheroma, aneurism, etc.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
54. Embolism and thrombosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
55. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
56. Diseases of the lymphatic system (lymphangitis, etc.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
57. Hæmorrhage; other diseases of the circulatory system	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals of circulatory system	8	1	...	...	...	14	7	11	10	18	19	19	30	38	40	81	90	140	149	146	91	40	29	1	422	551	973	

TABLE No. 8 (continued).

CAUSES OF DEATH.	AGE.																	SEX.		TOTAL.								
	Under 1 year.	1 year and under 2 years.	2 years and under 3 years.	3 years and under 4 years.	4 years and under 5 years.	Total under 5 years.	5 years and under 10 years.	10 years and under 15 years.	15 years and under 20 years.	20 years and under 25 years.	25 years and under 30 years.	30 years and under 35 years.	35 years and under 40 years.	40 years and under 45 years.	45 years and under 50 years.	50 years and under 55 years.	55 years and under 60 years.	60 years and under 65 years.	65 years and under 70 years.		70 years and under 75 years.	75 years and under 80 years.	80 years and under 85 years.	85 years and over.	Age not known.	Males.	Females.	
IV. DISEASES OF THE RESPIRATORY SYSTEM.																												
57a. Asphyxia	1	29	6	1	...	107	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
58. Acute bronchitis	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
59. Chronic Bronchitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60. Broncho-pneumonia	133	90	35	15	6	279	6	1	3	1	2	...	5	4	2	3	8	11	21	10	5	5	9	...	...	...	...
61. Pneumonia	72	60	27	7	1	167	7	2	1	6	6	9	12	16	15	19	18	20	26	22	9	5	...	...	...	...	...
62. Pleurisy	...	...	1	...	...	1	1	1	2	...	1	...	2	...	1	5	...	1	3	1	...	...	...	...	...	...	...
63. Gangrene of the lung	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
64. Asthma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
65. Pulmonary emphysema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
66. Other diseases of the respiratory system (tuberculosis excepted)	4	4	...	...	...	8	1	1	...	...	1	2	...	2	1	2	1	...	...	1	...	...	...	...	...	...	...
Total of respiratory system	281	183	69	23	7	563	20	5	10	9	15	14	29	39	41	70	94	100	134	132	70	51	22	...	...	705	713	1418
V. DISEASES OF THE DIGESTIVE SYSTEM																												
67. Ulcer of the stomach	2	...	...	...	...	2	...	...	...	...	1	3	2	2	1	4	...	2	...	1	2	...	...	...	...	...	...	...
68. Other diseases of the Stomach (cancer excepted)	15	2	...	1	...	18	...	1	...	...	1	...	2	1	2	3	3	1	4	1	1	1	1	...	...	...	...	...
69. Diarrhoea and enteritis	127	15	8	4	1	155	8	2	5	...	2	...	1	...	2	3	1	...	...	...	...	...	...	...	...	...	...	...
70. Appendicitis and typhilitis	...	...	...	2	...	2	...	4	...	1	1	1	3	2	2	3	1	3	...	...	...	...	...	...	...	...	...	...
71. Hernias intestinal obstructions	7	...	...	...	...	7	...	...	...	2	1	1	3	2	2	7	7	7	2	2	3	1	...	...	...	...	...	...
72. Other diseases of the intestine	6	1	...	...	...	7	...	...	1	1	2	2	2	2	...	3	2	3	2	2	...	2	...	...	...	...	...	...
73. Acute yellow atrophy of the liver	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
74. Hydatid tumour of the liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
75. Cirrhosis of the liver	...	...	1	...	...	1	...	...	...	...	...	...	...	1	2	1	2	4	4	...	...	...	...	...	...	...	...	...
76. Biliary calculi	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	3	1	1	1	1	...	...	...	...	...	...	...	...
77. Other diseases of the liver	3	...	...	...	...	3	...	...	...	...	1	4	...	...	1	3	3	2	5	4	...	...	...	...	...	...	...	...
78. Simple peritonitis (non-puerperal)	1	...	...	...	...	1	1	...	...	2	1	1	1	1	1	...	3	2	1	...	...	...	...	...	...	...	...	...
79. Other diseases of the digestive system (cancer and tuberculosis excepted)	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
Totals of digestive system	161	18	9	7	1	195	10	7	8	6	11	14	16	13	14	27	23	26	30	10	7	4	2	...	...	222	202	424
VI. NON-VENEREAL DISORDERS OF THE GENITO-URINARY SYSTEM.																												
80. Acute Nephritis	...	...	...	...	...	...	2	3	1	...	2	5	2	3	6	5	5	9	5	2	2	1	1	...	...	...	...	...
81. Bright's Disease	...	...	...	...	...	...	...	...	4	3	...	3	2	3	2	12	11	10	7	4	3	3	1	...	...	...	...	...
82. Other diseases of the kidneys	...	...	...	...	...	...	...	...	1	2	1	...	...	...	...	2	2	3	...	...	...	...	...	...	...	...	...	...
83. Calculi of the urinary passages	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
84. Diseases of the Bladder	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	4	...	...	3	1	2	...	...	...	...	...
85. Diseases of the prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	3	6	4	2	2	2	...	...	...	...	...
86. Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
87. Tumor (non-cancerous)	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	1	...	1	...	...	...	...	...	...	...	...	...	...
88. Other diseases of the uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals of genito-urinary-system	1	...	...	...	...	1	2	3	6	5	3	8	5	11	21	24	21	30	18	16	10	7	4	...	...	117	78	195

CAUSES OF DEATH.	AGE.																		SEX.										
	Under 1 year.	1 year and under 2 years.	2 years and under 3 years.	3 years and under 4 years.	4 years and under 5 years.	Total under 5 years.	5 years and under 10 years.	10 years and under 15 years.	15 years and under 20 years.	20 years and under 25 years.	25 years and under 30 years.	30 years and under 35 years.	35 years and under 40 years.	40 years and under 45 years.	45 years and under 50 years.	50 years and under 55 years.	55 years and under 60 years.	60 years and under 65 years.	65 years and under 70 years.	70 years and under 75 years.	75 years and under 80 years.	80 years and under 85 years.	85 years and over.	Age not known.	Males.	Females.	TOTAL.		
VII. PUERPERAL STATE																													
89. Accidents of pregnancy										1	3	2	1														7	7	
90. Puerperal hæmorrhage										1	1	2	1														6	6	
91. Other accidents of labour										3	2	4	2														12	12	
92. Puerperal septicæmia									1	2	2	3	3														11	11	
93. Puerperal albuminuria and convulsions											1		1														3	3	
93a. Puerperal Insanity													1														1	1	
Totals of puerperal state								2		7	9	11	9	1	1												40	40	
VIII. DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.																													
94. Gangrene		1				1																					7	8	
95. Acute Abscess										2		1				2	1	2								4	5	9	
96. Other diseases of the skin																													
Totals of skin tissue		1				1	1			2		1				2	2	5	2	6	1	1				11	13	24	
IX. DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION.																													
97. Diseases of the bones (tuberculosis excepted)							2	1		1			1														3	3	6
98. Diseases of the joints (tuberculosis and rheumatism excepted)						1									1		2			1						4	1	5	
99. Amputations																													
100. Other diseases of the organs of locomotion																													
Totals of bones and organs of locomotion				1		1	2	1		1			1		1		3			1						7	4	11	
X. MALFORMATIONS.																													
101. Congenital malformations (stillbirths not included)	36	2				38				1		1														16	24	40	
XI. DISEASES OF EARLY INFANCY.																													
102. Congenital debility icterus, and sclerema	291	7	1	1		300																				186	114	300	
103. Other accidents at birth	1					1																					1	1	4
104. Inattention at birth	4					4																					1	3	4
105. Other diseases peculiar to early infancy	10					10																				3	7	10	
Totals of early infancy	306	7	1	1		315																				190	125	315	
XII. OLD AGE																													
106. Senility																										93	218	311	

TABLE No. 8 (continued).

CAUSES OF DEATH.	AGE.																			SEX.		TOTAL.						
	Under 1 year.	1 year and under 2 years.	2 years and under 3 years.	3 years and under 4 years.	4 years and under 5 years.	Total under 5 years.	5 years and under 10 years.	10 years and under 15 years.	15 years and under 20 years.	20 years and under 25 years.	25 years and under 30 years.	30 years and under 35 years.	35 years and under 40 years.	40 years and under 45 years.	45 years and under 50 years.	50 years and under 55 years.	55 years and under 60 years.	60 years and under 65 years.	65 years and under 70 years.	70 years and under 75 years.	75 years and under 80 years.		80 years and under 85 years.	85 years and over.	Age not known.	Males.	Females.	
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																												
107. Suicide by poison	1	4	4	4	1	2	3	1	1	1	2	19	4	23
108. Suicide by asphyxia .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
109. Suicide by hanging or strangulation	2	1	2	4	1	4
110. Suicide by drowning .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
111. Suicide by firearms .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
112. Suicide by cutting or piercing instruments	1	1	1	3	1	4
113. Other suicides	1	1	2	2	2
114. Poisoning by food	2	2	1	2	4	4	8
115. Other acute poisonings	3	..	2	2	1	1	2	..	1	8	9	17
116. Burns	3	1	2	1	7	3	..	2	2	1	1	1	5	1	1	5
117. Absorption of deleterious gases	1	1	1	1	1	1	1
118. Accidental drowning .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
119. Traumatism by cutting or piercing instruments .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
120. Traumatism by fall .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
121. Traumatism by machines .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
122. Excessive cold .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
123. Effects of heat .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
124. Homicide by firearms .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
125. Homicide by cutting or piercing instruments .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
126. Homicide by other means .....	..	..	..	..	..	..	3	..	..	..	..	1	..	1	2	..	..	1	1	5	4	..	..	..	..	..	..
127. Fractures (causes not specified) .....	..	..	1	..	1	2	..	..	..	..	..	..	..	1	2	..	..	1	2	6	1	..	..	..	..	..	..
128. Other external violence	2	1	4	1	3	11	4	6	6	4	3	5	4	7	4	4	5	4	4	2	6	1	57	19	76
128a. Post Operative Shock .....	..	1	..	..	..	1	..	..	..	..	..	..	..	2	2	..	..	1	..	..	..	..	..	..	2	2	4
* Total of affections by external causes	2	5	6	3	5	21	10	7	9	6	8	13	9	12	9	10	11	11	7	14	8	..	..	..	116	49	165
XIV. ILL-DEFINED DISEASES.																												
129. Ill-defined organic disease .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
130. Sudden death	1	1	1	..
131. Cause of death not specified or ill-defined	1	1	1	1	1	2	3	5
Totals of ill-defined diseases	1	1	1	1	1	1	1	3	3	6
Totals from all causes	979	341	144	62	36	1592	96	71	128	169	172	177	186	228	246	382	422	491	523	599	358	246	146	1	2925	3278	6203	

Deaths occurring outside the City, of persons who normally resided in the City, not included.

SOCIAL CONDITIONS, INCLUDING THE CHIEF OCCUPATIONS OF THE INHABITANTS AND THE INFLUENCE OF ANY PARTICULAR OCCUPATION ON PUBLIC HEALTH.

In its public health sense the expression "social conditions" means principally the conditions under which people live, with special reference to housing amenities, overcrowding, etc. If we associate a survey of housing conditions with a statement as to the prevailing industries in a city or town we are able to form some opinion touching the "social conditions" of the particular community concerned. The Medical Officer deals with social conditions in their relationship to health and disease as these latter two have manifested themselves, and as they are likely to develop. Good health and its vis a vis disease are the outcome of many factors comprising such as heredity, environment, opportunity, occupation, personal conduct, etc. The particular factors we are now contemplating are environment and occupation.

We are very largely dependent upon the census of the Registrar-General for Northern Ireland and here respectful appreciation may be expressed for his last report, i.e., 1926. It is much to be desired that a census should be taken every 5 years instead of decennially. For the purposes of this present Annual Report the census population of 1926 is used. A quinquennial census would promote greater accuracy in certain statistical returns associated with this report; in future Annual Health Reports an effort will be made to use an estimated population, from year to year (obviously as the years pass since the last census was taken, the greater is likely to be the margin of error if we adhere year after year to the population figures, given at last census). This proposed estimated population will be carefully prepared from the balance between births and deaths, emigration and immigration, occupied houses, numbers per family, density, etc., etc. I propose now to discuss population, overcrowding, etc., from the statistical, and thereafter a more interesting point of view.

Population. Wards.

There are fifteen wards in the city and for the 15 years preceding 1926 an increase in population took place in all these wards, with the exception of St. George's, which diminished, though this increase in fourteen wards was slower than that which took place in the preceding ten years. There were three wards—Court, Dock and Smithfield—in which the increase in population during the fifteen years mentioned was not at a slower rate than in the preceding ten years.

It is necessary, at this stage, to define "density." It can mean the number of people per acre, or the number of persons per room. Density does not necessarily mean overcrowding, as the acreages of urban areas may include widely differing proportions of waste land, land under pasture, etc. For example, the area of the County Borough of Belfast is 23 square miles (exclusive of tidal water); no fewer than $11\frac{1}{2}$ square miles is composed of land under crops and pasture. The greatest actual increase in population during the fifteen years prior to 1926 was in the Ormeau ward, while the greatest percentage increase was in Falls ward.

House Accommodation:

Between the census years 1911 and 1926 the number of houses increased by five per cent. and the number of inhabited houses increased by practically ten per cent. The population increased by 7.3 per cent. A reduction in the number of uninhabited houses took place.

The average number of persons per inhabited house showed a steady decrease between 1911 and 1926, thus maintaining the fall prevailing since 1851. The average number of persons per family, which was practically constant

between 1881—1911, has also shown a marked fall. At the present time the fall in the birth-rate throughout the Kingdom is regarded by some with concern. It is said that we will not be able to people our far-flung Empire. The genius of our nation will rise to any emergency, as it has always done, notwithstanding the pessimists; in view of the difficulties of the times, if for no other reason, small families are advisable.

Overcrowding is dependent upon the size of families and the supply of houses.

The number of families per 100 inhabited houses at each ten-yearly census enumeration, commencing with 1871, was as follows:—131, 119, 110, 104 and 103 in 1911, whilst for 1926 the figure is 109. In this respect, therefore, there has apparently been a slightly retrograde movement since 1911—a result to be expected from the fact that the proportion of families to population has increased at a greater rate than that of inhabited houses to population. Notice again that in 1926 there were 109 families for every 100 houses; whilst a percentage of families were, therefore, not living in their own house, it is clear, that in 1926 the problem of house accommodation, one for each family, was smaller in Belfast than one might have expected having regard to the widespread national complaints as to overcrowding and the shortage of houses. That fact is well worth noting, remembering especially that frequently there is ample room in a fair sized house for two families. Given, then, 109 families per 100 houses for the city as a whole, what is the proportion in the different wards. In Smithfield it was 125; Ormeau and Windsor had 105 each. Thus in Smithfield ward 22 per cent. or, roughly, one in five of the houses are sublet. In 1926 there were 2,309 inhabited houses in Smithfield ward, so that in some 500 houses there was more than one family. Looked at in another way, 92 per cent. of all the inhabited private houses in Belfast were occupied by single families. Approximately there were 7,000 families out of 89,724 which lived in with another family. These facts are surprisingly pleasing having regard to what one feared was the case at the outset of this enquiry.

Our scrutiny of the conditions under which people are living must be more detailed. From considering numbers of houses and families we come to the question of the percentage of the population, in private families, living in premises, per room. We find that in 1926, 14.4 per cent. of families were living more than two persons per room. Does this mean 14 per cent. of families were overcrowded? What is overcrowding? There is no recognised legal definition of overcrowding as regards dwelling houses. In Common Lodging Houses there must be 300 cubic feet per adult in England and Wales and 400 in Northern Ireland; in Factories 250 cubic feet per person and 400 for overtime. The Registrar-General for England and Wales gives, as a workable standard, any room containing more than two people, as overcrowding. The rooms counted do not include sculleries, pantries, cloakrooms, etc., etc., etc. This is a fair standard, but consideration must be given to the size of rooms and to the ages of the tenants; for example, two children under 10 years should be counted as one adult. In the city, then, 14 per cent. of families were living more than two persons per room. In Smithfield ward the percentage was over 31, in Court ward 24.8, in Dock ward 22.5, in Windsor ward 5.4, Ormeau ward 7.4, Cromac ward 9.4. These figures are an indication of a trend in the direction of overcrowding, a condition that is provocative of discomfort, discontent and of ill-health. On the other hand, throughout the city the occupied room accommodation is one room per person. The lowest amount of accommodation per person is in the Smithfield ward, where there is an average of roughly three rooms for every four persons. In the Falls ward the low figure for rooms per person is coupled with the largest number of persons per family. The highest accommodation figure of rooms per person in conjunction with the lowest number of persons per family is in the Windsor ward.

Over 40 per cent. of the families in the County Borough occupy four rooms each—the family of three occurs most frequently—the most common combination consists of families of four, each family occupying four rooms. The

Registrar-General reports that "there are 120 cases comprising 794 persons where six or more persons are occupying a single room, 5 cases comprising 62 persons at a similar density of occupation in two-roomed dwellings, etc." It is a pity that one cannot receive information as to where these cases are. Four years have elapsed since the census and it may be that these cases have been alleviated.

It should be mentioned that at the time of taking the census the disturbance of houses, and dispossession of numerous families of housing accommodation, caused by the upheaval of 1920-1922 had not been made good. It was then not an uncommon occurrence for several families to occupy any disused buildings that were available—for example, six or eight families occupied a large schoolroom for several months. Many of these dispossessed families took forcible possession of the buildings and paid no rent.

Below, the subject of overcrowding is discussed as ascertained by the Public Health Staff during 1929.

Having considered the position up to the date of the census in 1926 it falls to be recorded that since that time several thousand houses have been built. Since January, 1929, a total of 5,422 have been erected.

We now turn to, perhaps, a more interesting aspect of this subject.

CASUAL OVERCROWDING.

By "casual" overcrowding it is meant that a case of overcrowding, or alleged overcrowding, was ascertained or "come across" by some member of the staff, such as a Tuberculosis or Maternity and Child Welfare or School Health Visitor, in the course of her home visiting work. Again, a Sanitary Sub-Officer when visiting a house to enquire, say, concerning a case of notified infectious disease may note overcrowding, or, again, someone may have written complaining. This "casual" overcrowding is that which is discovered casually as opposed to "routine" overcrowding, which latter is discovered by Sanitary Sub-Officers when engaged in doing house-to-house inspections as an allotted routine task. In investigating "casual" overcrowding the staff was asked to note several points:—

(1). What was the state of health of the overcrowded family? It is simply folly to suggest that because case after case of overcrowding occurs in which the family health is good, that, therefore, overcrowding is of little or no importance. As a corrective, look at the manner, disclosed hereafter, in which tuberculosis walks cheek by jowl with its messmate overcrowding: I had almost said that the one was the complement or sequence to or of the other; it is not quite so, but these two bad characters are, so to speak, on visiting terms. Overcrowding, apart from its social and moral dangers, is a bitter enemy to that state of good health which every human being ought to enjoy as his birthright. Wherever you have overcrowding, physical and soul development are held back, weighted down by the ungenerous and polluted mouthful of air which the condemned habitues must inhale and re-inhale. The body is manacled and cannot bathe itself in the sweet fullness of life-giving oxygen. The mind is a flame which waxes and wanes dependent on the health of the body. Overcrowding, therefore, is a social menace, a poison to the individual, an injury to the State, a drawback to the community.

(2). In assessing overcrowding the Inspectors were asked to keep two standards in view, i.e., (a) the English Registrar-General's, namely, that more than two persons in a room spells overcrowding. This is a good working rule, though it has no legal force behind it. An Inspector would, therefore, count the kitchen, bedrooms, parlour, etc. (of course he would miss out the scullery, closets, cupboards, etc.) and would then be ready to do a simple sum in

arithmetic. He would then count the numbers of the family—but here a warning note is necessary. Always count two children under 10 years as being equal to one adult; this is only fair. Suppose then there is a house made up of a kitchen, a parlour and 3 bedrooms and that this is occupied by eight adults and six children **under 10 years**, that means for our purposes that that house contains eleven persons. Divide eleven by the five rooms and we get 2.2 persons per room, i.e., overcrowding on the Registrar-General's scale. Note again that I informed the Inspectors that if they found eleven children under 10 years, or seven children under 10 years, such were to count as being equal to six and four adults respectively, that is, the odd number was to count as an adult. (b) In assessing overcrowding we keep another standard in mind, namely, the number of cubic feet per head in each room. In Factories we require by law 250 cubic feet per head and 400 for overtime: in Common Lodging Houses, 300 cubic feet is required in England and Wales (and 400 in Belfast): in Bakehouses we demand a high scale depending upon such questions as to how the bakehouse is lighted and whether it is above or below ground.

So, in all enquiries into overcrowding a sane balance must be maintained; on the one hand we must not worship as a deity the Registrar-General's definition, and on the other—the 300 cubic feet—we must exercise judgment and experience.

(3). Next, I asked the Inspectors, whilst walking with circumspection, to get some information as to the rents paid by persons living in overcrowded conditions and also to find out whether the people were employed or unemployed, and what their wages might be. All this was done with circumspection—for a Public Health reason and not out of prying and impertinent curiosity. The results are most interesting:—

- (a) The overwhelming majority of people living in overcrowded houses or rooms were **employed**—were not “unemployed.”
- (b) The rents, in a very large majority of cases, were very, very low.
- (c) The wages were often—but not by any means always—poor.

The deduction to be drawn—the unavoidable deduction—from the purely economic point of view is that if the Corporation builds houses for the “overcrowded,” then money will be dropped. From a Public Health point of view I regret the tragedy of overcrowding and earnestly wish that a way out could be found in the form of roomy, comfortable houses at a low rent.

Before giving a note on the investigation of casual overcrowding in the North, South, East and West of the city, a word of warning should be uttered as to the number of cases of tuberculosis found in these overcrowded houses or rooms. The number of cases of tuberculosis seems alarming; it certainly serves to show that housing, as such, is related to tuberculosis. The true way to appreciate the relationship of overcrowding to tuberculosis is to give the total number of cases of tuberculosis in the city and to state the percentage of cases of overcrowding in such houses. The number of cases of tuberculosis actually given in the Tables herewith merely serves to show that the Tuberculosis Health Visitors have been scrupulously conscientious in making their enquiries in respect to each case of tuberculosis visited.

NORTH DIVISION.

62 complaints: 48 found definitely overcrowded. To show the fairness of our standard the following five cases were rejected as **not** being overcrowded:—

Number of families in the house	Number of rooms.	Number of adults.	Number of children.	Persons per room.	Cubic space per head.
3	5	6	6	1.8	374
4	5	7	6	2	528
3	5	6	9	2	460
6	8	10	7	1.7	437
5	11	13	8	1.5	460

The above cases are unsatisfactory; they are not overcrowded, but from a social point of view their cases are not right. There should not be three families sharing five rooms or six families sharing eight rooms.

As to the 48 overcrowded cases, the following selections are self-explanatory:—

Number of families in the house	Number of rooms.	Number of adults.	Number of children.	Persons per room.	Cubic space per head.
7	8	18	16	3.2	549
3	5	6	10	2.2	400
2	4	11	5	3.5	238
3	5	10	7	2.8	575
9	11	22	15	2.7	354
6	9	14	11	2.2	477

In the 62 households there were 6 cases of tuberculosis, as follows:—

Number of families in the house.	Number of rooms.	Number of adults.	Number of children.	Persons per room.	Cubic space per head.	Remarks.
1	3	5	5	2.6	310	Rent 4/3 Wages 35/-.
1	4	6	—	1.5	560	Rent 5/- Wages 70/-.
1	2	4	4	3	322	Rent 3/6 Wages 50/-.
1	2	2	6	2.5	371	Rent 4/6 Wages 60/-.
2	3	4	7	2.6	242	Rent 9/8 Wages —
3	5	6	11	2.4	287	Rent 28/- Wages —

SOUTH DIVISION.

33 casual cases of overcrowding were enquired into and 23 were proved to be true cases of overcrowding. Here are some of the cases:—

Number of families in the house	Number of rooms.	Number of adults.	Number of children.	Persons per room.	Cubic space per head.
2	4	4	13	2.7	272
2	4	4	11	2.5	230
2	1	2	2	3	206
2	3	5	5	2.6	256
2	4	8	4	2.5	291
2	4	4	11	2.5	275
2	4	8	1	2.2	238
2	4	7	4	2.2	243
2	4	12	—	3	240
2	3	6	1	2.3	294
1	3	9	—	3	228
2	4	7	6	2.5	210

In the 33 households complained of there were 7 cases of tuberculosis. In the 23 verified cases of overcrowding there were 4 cases of tuberculosis. The circumstances in these 4 cases of tuberculosis were:—

No. of families in the house.	No. of rooms.	No. of adults.	No. of children.	Persons per room.	Cubic space per head.	Employed families	Cases of tuberculosis.	REMARKS.	
								Total rent.	Wages.
2	2	4	3	3	336	1	1	—	—
2	1	2	2	3	206	1	1	4/5	30/-
1	2	2	6	2.5	426	Part-time	1	3/9	12/- Part-time work
2	4	4	11	2.5	243	None	1	6/6	Bureau

EAST DIVISION.

Sixteen complaints—all corroborated. In one instance, a large house, 11 families occupied 13 rooms. The 11 families consisted of 26 adults and 21 children, i.e., 37 adults (counting two children under 10 years as equal to one adult) in 13 rooms, just short of three persons per room. Bad. As to the remaining 15 houses: 12 were four-roomed, 2 were three-roomed, and 1 was two-roomed. The following 9 cases were the worst:—

No. of families in the house.	No. of rooms.	No. of adults.	No. of children.	Persons per room.	Cubic space per head.	Health.	REMARKS.	
							Total income.	Rent.
2	4	7	7	2.7	211	Fair	—	—
2	4	10	4	3	311	1 T.B.	99/-	4/11 sub-tenant 5/-
2	4	8	5	2.7	282	—	—	—
1	4	8	3	2.5	309	2 T.B. and 1 dead T.B.	70/-	3/11
1	4	5	5	2	307	Fair	—	—
2	4	8	3	2.5	329	Fair	—	—
3	4	5	8	2.2	276	1 T.B.	20/-	3/6
1	3	3	7	2.3	322	Fair	—	—
3	4	6	8	2.5	282	—	—	—

WEST DIVISION.

60 complaints received; 50 verified as overcrowded. 14 cases of tuberculosis in the 60 cases. The following are the circumstances in the 14 cases of tuberculosis:—

No. of families in the house.	No. of rooms.	No. of adults.	No. of children.	Persons per room.	Cubic space per head.	REMARKS.	
						Rent.	Income
1	3	7	—	2.3	425	2/9	£2 2 2
1	3	5	—	1.6	538	3/6	2 7 6
1	2	5	3	3.5	263	2/9	1 9 6
1	2	5	1	3	207	2/1	1 19 0
1	2	2	5	2.5	—	2/6	0 15 0
2	3	7	3	3	244	4/3	4 7 6
2	4	7	6	2.5	303	5/-	5 10 0
1	3	7	4	3	231	4/1	1 6 8
2	3	6	4	2.6	387	3/2	4 3 0
2	4	4	6	1.7	400	5/1	5 1 11
1	4	7	3	2.2	420	5/-	3 3 0
2	4	11	4	3.2	213	4/11	3 10 0
1	4	5	7	2.2	332	4/5	2 2 0
1	3	5	4	2.3	363	3/-	1 17 6

ROUTINE OVERCROWDING.

During 1929 the Inspectors were requested, when doing Housing Inspection work, to take any rows of houses they liked and not to concentrate on areas or rows known or suspected to be overcrowded. This probably accounts for the fact that few cases of overcrowding were found. Unfortunately, owing to a misunderstanding, I am unable to give figures for the East Division of the city. In the North, South and West Divisions out of 10,786 houses inspected only 301 cases of overcrowding were discovered.

The North Division.

Only 109 out of 3,614 examined were overcrowded. In 38 of the 109 households there was less than 300 cubic feet per person, and in only 2 was the amount under 200. In one of these latter was found a case of tuberculosis present in a house of four rooms containing 3 families yielding a total of 11 adults and 7 children. The total number of cases of tuberculosis found in the 109 houses was 5; 2 cases in each of 2 families. Three of the five families were unemployed.

There were 206 persons residing in the 28 overcrowded houses in two certain streets, made up of 133 adults and 73 children: 206 persons in 57 rooms. Counting the 73 children as being equal to 37 adults there were, therefore, nearly 3 persons per room.

The South Division.

In this Division 4,126 houses were inspected and 164 were found overcrowded. Four cases of tuberculosis were present; in 3 of the 4 directly concerned there were two families. The total rooms available were 13 for 22 adults and 7 children; all these families were in work; rents were low.

Taking the 164 houses overcrowded, in 52 there were under 300 cubic feet per head; in two cases less than 200 cubic feet each; in six cases complaint was made as to the family health; in 26 cases there was unemployment while in approximately 12 there was part-time work.

The rents were—

4/2, 4/10, 6/4, 6/-, 5/1 for four rooms.

5/-, 4/6, 3/5 for three rooms.

3/1, 3/7, 2/4, 3/8 for two rooms.

There were 709 adults and 532 children (under 10 years) residing in the 164 overcrowded houses. 244 families occupied 527 rooms in the 164 houses.

The West Division.

Only 28 households overcrowded out of 3,046 examined. Of the 28 cases of overcrowding in this Division, there were 5 of tuberculosis in these houses. In 3 of the families concerned, there was over 300 cubic feet of space for each member of the household, but in 2 cases the amount available was only 189 and 192 respectively. In the former of these 2 cases there were 5 adults and 10 children (2 families) occupying four rooms; in the latter case, 8 adults and 6 children, in 2 families, occupying four rooms. In 3 of the 5 households concerned the health of the families was "fair," and "good" in the remaining two. In only one of the 28 cases of overcrowding was there unemployment. In every case the rents were exceptionally low, varying from 2/9 to 4/6 and 5/3 for two, three and four rooms.

In the 28 households 38 families were in occupation of a total of 88 rooms; there were 183 adults and 91 children. It must be remembered that in estimating overcrowding 2 children under 10 years are counted as one adult.

To sum up the question of overcrowding. Compared with other cities I believe we are fortunate. None the less, overcrowding is always serious from a health point of view, as well as others. The overcrowded are not charged high as regards rents—quite the contrary. To a certain extent the whole community must pay where families are overcrowded, e.g., Sanatoria.

An essay on "Social Conditions" requires a note on the different kinds of trades and occupations, the prevailing industry in a locality. In 1926 the total population was made up of 195,539 males and 219,612 females. Of these the total occupied, of 12 years of age and over, was 126,003 males and 76,901 females. Some 40 per cent. of the occupied males are to be found under three main groups or orders, namely, Metal Workers, Transport Workers, and persons engaged in Commerce, Finance and Insurances. The occupations of most numerical importance among the males are:—General Labourers, Clerks, Proprietors of Dealing Businesses, Salesmen and Shop Assistants, Builders, Bricklayers, Plasterers, Masons and their Labourers, Cabinet Makers and Carpenters, Fitters, and Millwrights and their Labourers.

Of the occupied females 72 per cent. are included under the orders:—Textile Workers, Makers of Textile Goods and Articles of Dress, and Personal Service; the most important occupations numerically being Sewers and Stitchers, Domestic Servants, Weavers, Clerks and Typists, Spinners and Pickers, and Shop Assistants.

The Registrar-General points out that the Manufacturing Industries (using that term in a wide sense) directly provide a livelihood for 58 per cent. of the occupied population; Commerce and Finance (which include the wholesale and retail distributive trades, banking, and insurance) provide for 16 per cent.; and Personal Service (which includes service in hotels, restaurants, etc.) for 7 per cent.

The two main manufacturing industries are the Metal Trades (including vehicle and shipbuilding) and the Manufacture of Textiles. These provide for 14 per cent. and 25 per cent. of the occupied population respectively.

TABLE No. 10.

Shewing the Number of Deaths registered as having been caused by Phthisis and Diseases of the Respiratory Organs during the twenty years, 1910-1929:—

Year.		Population.	Phthisis	Rate per 1,000	Diseases of the Respiratory System			Total Chest Affections
					Pneumonia	Others	Total	
1910	.....	..... 391,167	825	2.1	622	916	1,538	2,363
1911	.....	..... 386,449	802	2.1	468	788	1,256	2,058
1912	.....	..... 391,974	802	2.0	799	981	1,780	2,582
1913	.....	..... 396,000	844	2.1	665	868	1,533	2,377
1914	.....	..... 399,000	836	2.1	701	929	1,630	2,466
1915	.....	..... 403,000	813	2.0	738	929	1,667	2,480
1916	.....	..... 390,000	830	2.1	506	670	1,176	2,006
1917	.....	..... 393,000	932	2.4	614	825	1,439	2,371
1918	.....	..... 393,000	1,051	2.7	1,412	1,608	3,020	4,071
1919	.....	..... 401,000	853	2.1	712	1,104	1,816	2,669
1920	.....	..... 413,000	762	1.8	800	766	1,566	2,328
1921	.....	..... 420,000	677	1.6	511	520	1,031	1,708
1922	.....	..... 425,000	624	1.5	594	648	1,242	1,866
1923	.....	..... 429,000	571	1.3	564	573	1,137	1,708
1924	.....	..... 434,000	605	1.4	623	720	1,343	1,948
1925	.....	..... 438,000	575	1.3	517	646	1,163	1,738
1926	.....	..... 416,000	570	1.4	516	630	1,146	1,716
1927	.....	..... 416,000	515	1.2	479	526	1,005	1,520
1928	.....	..... 415,151	499	1.2	521	542	1,063	1,562
1929	.....	..... 415,151	485	1.2	680	761	1,441	1,926

PARTICULARS OF UNUSUAL OR EXCESSIVE MORTALITY DURING THE YEAR WHICH HAS RECEIVED OR REQUIRED COMMENT.

The outstanding feature of 1929, in so far as a cause of excessive mortality is concerned, was the epidemic of Influenza which affected Belfast in common with other cities and towns in Great Britain and Northern Ireland. While the epidemic did not resemble, in its severity and fatality-rate, at any time, the grave pandemic which swept the country shortly after the War, it was of a serious nature and called forth the maximum of effort from the Public Health Committee and the Officers of the department. The Acting Medical Superintendent Officer of Health, Dr. Barron, did not spare himself and he brought to bear every possible means for the prevention of spread of the disease and for the treatment of stricken households.

By the 18th January it became evident that the number of cases in the city had largely increased and it was deemed advisable to adopt further energetic measures in order to warn the public as to the precautions to be taken to prevent the spread of infection. To this end posters were printed and placed on tramcars, hoardings, omnibuses, public buildings, factories and workshops; at the same time handbills and pamphlets dealing with Influenza prevention were distributed by the Sanitary Officers and Health Visitors. Health propaganda in the local press was freely made use of and our gratitude goes out to the editors of the same for their kind assistance. Lectures were given by the Medical Officers at the Infant Welfare Centres, and advice by the Health Visitors when calling at the homes of the public. Circular letters were sent to the Dispensary Medical Officers regarding the conservation of the hospital accommodation by the careful selection of cases recommended for hospital treatment and advising that cases of a less serious nature might be nursed at home. For these latter patients home nursing assistance was offered and the Health Visitors were instructed to render all possible nursing aid. It soon became evident that further help was necessary, therefore, the nursing staffs of the Tuberculosis and School Medical departments were brought in to help with home nursing in the poorer districts. Still further assistance was obtained on application to Sir Robert Kennedy, K.C.M.G., representing the Order of St. John, and Sir Frederick Money Penny, C.V.O., C.B.E., representing the British Red Cross Society. These gentlemen very kindly placed at our disposal some twenty V.A.D. nurses who did excellent work in home nursing.

At the outset of the epidemic supplies of anti-influenza vaccine were obtained and these were distributed, free of charge, to the medical practitioners who applied for them. Free supplies of disinfectant were given to poor persons at the Disinfecting Station, Laganbank Road; no fewer than 200 bottles were given out daily. The Manager of the City Tramways was asked to spray with disinfectant all tramcars and omnibuses at frequent intervals and to intensify the customary oversight respecting ventilation, the prevention of overcrowding, and cleanliness of the cars. Mr. Chamberlain also was good enough to exhibit posters in the cars. The Managers of the various theatres, cinemas, dance halls and amusement halls were requested to have their premises sprayed frequently with disinfectant and to pay strict attention to ventilation. The schools were thoroughly disinfected and ventilated and hand sprayers were supplied where necessary. Posters were put up in prominent places at the Public Baths, Public Libraries, Police Courts, Fire Brigade Stations, and Lodging Houses.

The question of school closure, to which some authorities tend to resort, was carefully weighed and it was decided not to close. The value of keeping the schools open rests on the fact that where pupils are absent note is taken of this and the homes are visited and the needs of each family attended to. Cordial co-operation with family doctors was observed in all cases.

As usually occurs during times of unusual stress, money and comforts for the sick were received; these were gratefully acknowledged and the gifts were wisely used.

No fewer than 1,815 visits were paid to stricken homes by the twenty V.A.D. nurses who had volunteered for duty. Furthermore, many ladies were engaged in providing food and comforts to affected families and 425 visits were made in distributing these. The Order of St. John and the British Red Cross also provided generous supplies of coal, milk, soup, lemons, linseed meal, etc. To these two Societies, their principals, Sir Robert Kennedy and Sir Frederick Money Penny, and to all ranks, I can but say that they fulfilled right nobly the scriptural injunction "I was sick and ye visited me." So long as kind hearts beat in noble breasts, whether rich or poor, the Public Health Committee and their Officers will be able to face any epidemic secure in the knowledge that there are willing and powerful helpers in the city ready and anxious to step into the breach.

During the prevalence of the disease 350 died of Influenza and 496 from Pneumonia. Of this number 312 died from Influenza and 308 from Pneumonia during the sharp and lancinating period of the disease, which lasted from 5th January till 23rd February. Thus from a total of 846 deaths, we can readily understand that many thousands of citizens were laid aside from work with one of the most treacherous diseases that afflict mankind.

GENERAL PROVISIONS OF HEALTH SERVICES FOR THE AREA.

Hospitals Provided or Subsidised by the Sanitary Authority or by The County Council.

- A. (1) Fever.
(2) Smallpox.

Purdysburn Fever Hospital, with accommodation for 168 patients, was opened for the reception of persons suffering from infectious diseases in August, 1906.

The Hospital is built on the pavilion system, separate blocks being provided for each of the notifiable infectious diseases, with separate administration block, nurses' home, etc., and a suitable isolation block.

The accommodation soon proved insufficient, and in the year 1911 the Public Health Committee decided to increase the accommodation by two additional two-storey buildings and by enlarging the diphtheria block. This extension provided accommodation for 100 beds, bringing the total up to 268 beds. Even with the additional accommodation thus provided the hospital on several occasions, especially during the recurring epidemics of scarlet fever, proved to be far short of the city's requirements, and in the years 1922 and 1923 the Corporation authorised the enlargement of Nos. 3 and 4 pavilions respectively, together with the provision of additional accommodation for the staff and a new laboratory. These extensions brought the accommodation up to 312 beds.

There is a Smallpox Hospital situated in the same grounds but completely isolated in its own compound. It is self-contained having accommodation for 50 patients in four pavilions with separate administration block and nurses' home and an isolation pavilion.

The staff at the end of the year 1928 consisted of:—

- 1 Medical Superintendent.
- 1 Resident Medical Officer.
- 1 House Physician.
- 1 Temporary House Physician.
- 1 Steward.
- 1 Clerk.
- 1 Storekeeper.
- 1 Engineer.
- 2 General Mechanics.
- 3 Motor Drivers.
- 1 Van Man.
- 4 Firemen.
- 1 Pumping Station Engine Man.
- 5 Day Porters.
- 1 Gate Porter.
- 1 Night Porter.
- 1 Disinfector.
- 1 Foreman Gardener.
- 3 Groundsmen.
- 1 Matron.
- 1 Assistant Matron.
- 1 Night Superintendent.
- 1 do. joint.
- 1 Housekeeper.
- 11 Ward Sisters.
- 37 Nurses.
- 1 Seamstress.
- 1 Temporary Seamstress.
- 1 Head Laundress.
- 7 Laundry Maids.
- 1 Cook.
- 3 Kitchen Maids.
- 5 General Maids.
- 13 Ward Maids.

Union Fever Hospital.

There is accommodation for a large number of patients at the Union Fever Hospital which is under the control of the Belfast Board of Guardians. In the year 1919 as many as 600 patients were under treatment at one time.

Tuberculosis:—

Belfast Municipal Sanatorium, Whiteabbey.

A. Specify the hospitals available for the area, and, if they are supported wholly or partly by the Council, note their situation and the extent and nature of the present accommodation.

B. Any Institutional Provision for unmarried mothers, illegitimate infants and homeless children in the area.

A. The principal hospitals available for the area which do not come within the scope of "grant" are as follows. All these are honoured and esteemed by all men who realise the admirable work carried out from year to year therein :

The Royal Victoria Hospital.
 Belfast Union Hospital.
 The Mater Infirmorum Hospital.
 Queen Street Children's Hospital.
 The Benn Hospital.
 Samaritan Hospital.
 Hospital for Nervous Diseases, Claremont Street.
 Ophthalmic Hospital, Great Victoria Street.
 The Throne Hospital.

It should be understood that this list is not necessarily a complete one.

Hospitals Wholly or Partly Supported by the Council.

(1) Tuberculosis. (2) Maternity. (3) Children.
 (4) Orthopaedic. (5) Other.

(1) **Tuberculosis.** While the Reports on Graymount and Whiteabbey Sanatoria, by my colleagues Drs. Trimble and Walker, will be found in the body of this Report, the following particulars will be of interest:—

	Municipal Sanatorium, Whiteabbey.	Municipal Hospital for Tuberculosis Children, Graymount, and Open-air Day School.
Extent	33 acres.	15 acres and 2 roods.
No. of Beds	285 (all forms).	58 (non-pulmonary) 150 places for delicate contacts at Day School.
No. of Teachers	Two.	Four.
Hours of School	9.15 a.m.—3.15 p.m. (including rest hour and dinner).	9.30 a.m.—2.30 p.m. Winter. 9.30 a.m.—3.30 p.m. Summer.
Accommodation for Nurses	16 bedrooms and 3 sitting rooms.	1 bed-sitting room 2 sitting rooms. 7 bedrooms.
Visiting Days	Wednesdays and Sundays 2 till 4 p.m.	Wednesdays and Sundays. 2 till 4 p.m.

	Municipal Sanatorium, Whiteabbey.	Municipal Hospital for Tuberculosis Children, Graymount, and Open-air Day School.
Staff	<p>Medical Superintendent.</p> <p>2 Assistant Medical Officers.</p> <p>1 Visiting Physician.</p> <p>Part-time Dentist.</p> <p>3 Chaplains.</p> <p>1 Matron.</p> <p>5 Nursing Sisters.</p> <p>5 Staff Nurses.</p> <p>20 Probationer Nurses.</p> <p>1 Steward (jointly with Graymount).</p> <p>2 Lady Clerks.</p> <p>1 Engineer.</p> <p>2 Assistant Engineers.</p> <p>4 Firemen.</p> <p>1 Gardener.</p> <p>1 Assistant Gardener.</p> <p>1 Labourer.</p> <p>1 Hospital Porter.</p> <p>1 Gate Porter.</p> <p>1 Carpenter.</p> <p>1 Assistant Carpenter.</p> <p>22 Domestic Workers.</p>	<p>Visiting Surgeon.</p> <p>Part-time Dentist.</p> <p>1 Matron.</p> <p>1 Nursing Sister.</p> <p>5 Staff Nurses (temporary).</p> <p>6 Probationer Nurses.</p> <p>Part-time Steward (jointly with Municipal Sanatorium).</p> <p>Lady Clerk.</p> <p>1 Gardener.</p> <p>2 Labourers.</p> <p>1 Hospital Porter.</p> <p>8 Domestic Workers.</p>

(2) **Maternity.** The Maternity Hospital is situated in Townsend Street and a grant of £1,000 per annum is paid by the Corporation. There are four wards and two rooms containing 27 beds. For ante-natal cases there are 3 couches, one dispensary sister being in charge. The staff consists of the matron, intern sister (day), intern sister (night), two staff nurses, and twelve probationers.

As regards payment for treatment, maternity patients are charged at the rate of six shillings per day. In all cases, however, where the circumstances are poor, no charge is made—no poor woman has ever been turned away.

The staff of surgeon accoucheurs consists of four honorary and two resident medical officers, the senior of whom is the tutor. In addition there is one non-resident registrar, also one physician to Infants' Department.

During 1929, 1,514 new cases received ante-natal examination and care; in each case subsequent examinations were made.

Close co-operation exists between this hospital and the Public Health Department. Practically every week a telephone message is received with reference to some case or other in which assistance can be given by the

Department in "following up." Such may be cases in which a woman leaves before the doctors wish her to do so; this is an extremely foolish thing to do as the life or health of the mother may thus be imperilled. The Townsend Street Maternity Hospital is justly honoured and respected for the high excellence of the work encompassed. With the passing of time and the increasingly high reputation of this institution with inevitable increased calls upon its accommodation, it has been felt necessary to build a larger hospital and this is now approaching completion within the grounds of the Royal Victoria Hospital.

The accommodation to be provided consists of 100 beds. A ground floor ward will contain 44 maternity beds and a separate ward of 20 beds will be used by paying patients. Every modern improvement will be found: the building and arrangements are admirable. Nurseries, Ante-Natal Out-patients, Ante-Natal Ward, Isolation Ward, Mothers' Instruction Room, Work Room and Rest Room, Class Room, Study Rooms, and a Laboratory will form part of a great whole.

The following are the returns of work accomplished during 1929:—

Total number of patients admitted	.....	.....	.....	.....	.....	1,024
do. Ante-Natal cases (new)	.....	.....	.....	.....	.....	1,514
do. do. (re-attendances)	.....	.....	.....	.....	.....	4,168
do. do. admitted for abnormalities	.....	.....	.....	.....	.....	263
do. Confinements	.....	.....	.....	.....	.....	728
do. Treatments	.....	.....	.....	.....	.....	253
do. Treatments and Confinements	.....	.....	.....	.....	.....	72
do. Operations	.....	.....	.....	.....	.....	63
do. Babies born	.....	.....	.....	.....	.....	756

Only four patients died in the wards. As the admissions numbered 1,024 the mortality rate was 0.39 per cent., an enviably low death rate.

(2) **Maternity.** (3) **Children.**

(a) **Thorndale House** (The Salvation Army) is situated in its own grounds, Duncairn Avenue. The site is somewhat unique, this institution being relatively isolated on rising ground, thus receiving the maximum of sunshine and air perfation. The assistance of the lady in charge, Major Goodwin, was sought in the preparation of these notes and perhaps the best thing to do would be to give the report as written by her.

MAJOR GOODWIN'S REPORT.

"A few remarks and statistics regarding the work done in Thorndale House from 1st January—31st December, 1929, in the Maternity Dept.

"In the Maternity Home there are 24 beds and 2 Isolation Beds. Thirty-three girls were confined during the year most of which were kept from 4 to 6 months after the birth of child so that the little one might be breast-fed and by that means give it a fair chance at the beginning of its life as well as the mother. Nineteen of these were confinements of Belfast women and fourteen came from the country. Some of these latter came wandering from their own homes and came stranded to our shelter or else applied late at night. A few others applied direct from their own homes in the country, more or less all country girls.

"These cases were sent out as follows:—

- 24 girls to situations.
- 1 girl married.
- 16 girls sent home.
- 23 babies sent to foster mothers.
- 16 babies sent home to friends.
- 1 baby taken by mother to her place of employment.
- 15 of the babies' fathers were found and child affiliated.

In Home end of year—24 girls and 19 babies.

"In our Private Patients' ward we have had 16 confinements and 7 on the District. We have an antenatal once a week for the Private and District Patients and amalgamated with this a baby clinic for the weighing of the little ones and advice to mothers generally.

"We also have an after care Home and a very great number of our dear people helped in the Home visit us, bringing their babies, when we can again weigh them and give them little helpful talks as also entertain them for tea and give spiritual advice.

"Applications during the past two months for the Maternity Side have been greatly increased, and we are contemplating how to stretch out our borders so that we can take greater numbers.

Signed, L. GOODWIN, Major."

For private patients there are 4 beds in 2 rooms. For unmarried mothers 24 beds in 7 rooms; there is also an Isolation Ward and Labour Room.

The charges made vary in accordance with the circumstances of the case.

The staff consists of the matron, 2 midwives, assistant nurse, 5 officers, and home mother.

But little need be added. Thorndale House is inspected regularly by the Officers of the Department. It is admirably organised, invariably shining, just like a battleship—a great place in every way. The Corporation pay a grant of £300.

One death, a baby, occurred in the Home, from congenital deformity of the spine. A second death, in a child born in the Home, took place at the Union from enteritis.

The Belfast Midnight Mission and Rescue and Maternity Home.

This Home was founded in 1860 and is situated at No. 29 Malone Place. This institution is carrying out work of a high order, which included last year the admission to the Rescue Ward of 386 women who received one or more night's lodging and food—some indeed, remained up to fourteen days in residence.

During the year there were 118 confinements, 16 of which were in private patients (married); 8 babies were still-born; 3 infants died (2 from debility and one from prematurity), while one mother died from the toxaemia of pregnancy; this is very successful work. Eight patients were admitted for various operations, while 56 women were attended on the district by the nurses. Fifty expectant mothers were seen at the ante-natal clinic by Dr. Robb, with 132 attendances. Of the 118 confinements, 45 came from towns other than Belfast, though some had lived with friends in the City first. Nineteen of the 45 took situations afterwards in the City.

Infants born here are kept in the institution until such time as a good foster mother can be arranged for—where such is desired. The accommodation is made up of 27 beds for unmarried mothers placed in five wards; one of these has 14 beds, another has 7. Two rooms have 3 beds for private patients.

The ante-natal department consists of one examination and two waiting rooms.

A fee of two guineas per week is charged for private patients.

The staff consists of the matron and three nurses holding the C.M.B., together with four probationers.

(b) The Ulster Hospital, Templemore Avenue.

This excellent Hospital receives a grant of £250 from the Corporation annually. During 1929 there were 806 intern admissions to the Children's department while 8,001 out-patients were treated. 236 women were admitted and 1,801 out-patients received attention. The new cases in the Maternity department numbered 127. 1,774 operations were performed. For Maternity cases there are two beds in one ward; there are ten additional beds in another ward for women. For children the accommodation consists of 40 cots in two wards; there are two balconies; one isolation ward and a sun parlour. The number of new cases examined ante-natally was 222.

Out of the 806 intern admissions to the Children's department 50 died, giving a death rate of only 6.2 per cent.

The resident staff consists of:—

- 2 House Surgeons.
- 1 Matron.
- 3 Sisters.
- 1 Surgical Sister.
- 1 District Sister.
- 17 Probationers.

It is a great pity that more work cannot be undertaken at this Hospital, as the work urgently requires more accommodation, and extensions would be made if sufficient money were forthcoming.

St. Joseph's Babies' Home.

This institution receives a grant of £200 from the Corporation. The staff consists of a medical officer and a qualified matron, both of whom work hard for the infants admitted; there are also six young women of probationer standing. It was pointed out by me in November, 1929, that a qualified day nurse and a qualified night nurse should be appointed without delay.

The infants admitted here are mostly illegitimate and a proportion of these come from outside the city. The following are the statistics for 1929:—

Cases admitted in 1929	.....	.....	.....	78
Deaths among cases admitted in 1929	.....			21
Total deaths in 1929, including admissions prior to 1929	.....	.....	.....	26
Deaths occurring in 1929 in other institutions to which cases were removed	.....	.....		8
	1927	} Admitted to Home	.....	1
	1928		.....	3
	1929		.....	4
No. of cases admitted occurring in mothers not residents of the city during 1929	.....			18 of the 78 children admitted were born outside the city; 31 of the mothers had "outside addresses."
Birth status of the dead	.....	.....	.....	25 of the 26 illegitimate.
Percentage of deaths of children admitted during 1929	.....	.....	.....	26.9%
Percentage of deaths to admissions taking place in 1929 plus deaths taking place in institutions to which cases were sent	.....			32%

It is obvious that this is not satisfactory. It has been pointed out that in some other institutions the mothers are kept in with their babies for several months; this, together with nursing by trained (qualified) nurses, accounts for the fact that in these latter institutions the death rate is a negligible quantity. The need for qualified nursing of infants and young children, separated from their mothers, is a matter of much importance. There can be no doubt that if the arrangement for admitting the mothers with their babies into St. Joseph's Home was adopted the results would be more satisfactory.

AMBULANCE FACILITIES.

(a) For Infectious Cases.

(b) For Non-Infectious and Accident Cases.

(a) Infectious Cases.

Three ambulances (the property of the Belfast Corporation and garaged at Purdysburn Fever Hospital) are available for the conveyance of Infectious Diseases cases to this Hospital.

Three ambulances (the property of the Belfast Board of Guardians and garaged at Union Workhouse) are available for the conveyance of all stretcher cases to the Union Hospitals. These cases include the removal of the minor Infectious Diseases, such as Measles, Whooping Cough, etc.

All the above ambulances are disinfected on return after each journey.

(b) Non-Infectious Cases.

Four ambulances (one additional on order), the property of the Belfast Corporation and garaged at the Central and Branch Fire Brigade Stations are available for the conveyance of non-infectious cases. Each removal (except accident cases) must be so certified by a medical practitioner. These ambulances are at the call of any person in the case of accidents. They can also be required to remove a bedridden patient to or from a Nursing Home. There is a fee of one guinea charged where the person requisitioning the ambulance is able to pay.

CLINICS AND TREATMENT CENTRES.

1. Maternity and Child Welfare.

NAME.	SITUATION.	ACCOMMODATION.	DOCTORS' SESSIONS.
Danube Street	North Belfast Working Men's Club, Danube St.	Child Welfare Clinic.	Mondays, 2.30—5 p.m.
Donegall Road	Cripples' Institute, Donegall Road.	Child Welfare Clinic & Artificial Light.	Mondays, 2.30—5 p.m.
Dee Street	Dee Street Mission, Ballymacarrett.	Child Welfare Clinic & Artificial Light.	Tuesdays, 2.30—5 p.m.
Falls Road	Public Library, Falls Rd.	Child Welfare Clinic.	Tuesdays, 2.30—5 p.m.
York Street	Co-Operative Hall, Frederick Street.	Child Welfare Clinic.	Wednesdays, 2.30—5 p.m.
Shankill Road	Albert Hall, Shankill Rd.	Child Welfare Clinic.	Thursdays, 2.30—5 p.m.
Charlotte Street	Mission Hall, Charlotte Street.	Child Welfare Clinic.	Wednesdays, 3—5 p.m.
<hr style="width: 10%; margin: 5px auto;"/>			
Belfast Maternity Hospital	Townsend Street.	Ante-Natal Clinic.	Wednesdays and Saturdays, 9.30 a.m.—12 noon
Ulster Hospital	Templemore Avenue.	Ante-Natal Clinic.	

2. Tuberculosis Clinics.

Central Tuberculosis Institute, Durham Street.	Daily 9.30 a.m.—5 p.m.
Tuberculosis Institute, 225 Albertbridge Road.	Daily 9.30 a.m.—5 p.m.

3. School Clinics.

Central Clinic, Old Town Hall, Victoria Street.

ACCOMMODATION.	DOCTORS' SESSIONS.
Inspection Clinic.	Daily, 2—5 p.m. (except Saturdays)
Minor Ailments Clinic.	Tuesdays and Thursdays at 3 p.m., Saturdays at 10 a.m.
Eye, Ear, Nose and Throat Clinics.	Mondays, Tuesdays, Wednesdays and Thursdays at 10 a.m. Alter- nate Tuesdays and Thursdays— Operations.
Tonsils and Adenoids Operation Clinic.	Every alternate Tuesday and Thursday.
Dental Clinics.	Daily (except Saturdays) 9.30 a.m.
Artificial Light Clinic.	Tuesdays and Fridays 9-30 a.m.
Head Cleansing Clinic.	Daily (except Saturdays) 9.30 a.m.
Special Case Clinic.	Every Saturday 9.30 a.m.

North-West Clinic, 4 Crumlin Road.

Inspection Clinic.	Daily (except Saturdays) 2—5 p.m.
Minor Ailments Clinic.	Tuesdays, Thursdays 3 p.m. Saturdays 10 a.m.
Eye (Tuesdays, 10 a.m.) Nose and Throat (Saturdays 10 a.m.) Clinics.	
Dental Clinics.	Daily (except Thursdays and Satur- days) 9.30 a.m.
Artificial Light Clinic.	Mondays 9.30 a.m. Thursdays 9.30 a.m.
Head Cleansing.	Daily (except Saturdays) 9.30 a.m.
Special Case Clinic.	Every Saturday 9.30 a.m.

Ballymacarrett Clinic, The Mount.

Inspection Clinics.	Mondays, Wednesdays, Thursdays and Fridays, 2—5 p.m.
Minor Ailments Clinics.	Tuesdays and Thursdays 3 p.m. Saturdays 10 a.m.
Eye (Tuesdays, 2 p.m.) Nose and Throat (Fridays 2 p.m.) Clinics.	
Dental Clinic.	Mondays, Wednesdays, Thursdays and Fridays 9.30 a.m.
Head Cleansing Clinic.	Daily at 9.30 a.m. (except Saturdays).
Special Case Clinic.	Saturdays at 9.30 a.m.

4. Venereal Diseases Clinics.

Royal Victoria Hospital, Grosvenor Road.	Daily 9 a.m.—11 a.m. Mondays 7 p.m.—8 p.m.
Mater Infirmorum Hospital, Crumlin Road.	Tuesdays and Saturdays 9.30 a.m.—11.30 a.m. Thursdays 8 p.m.—10 p.m.
Union Infirmary, Lisburn Road.	Daily from 11 a.m., for admissions.

Medical Superintendent Officer of Health and Port Medical Officer:

CHARLES SAMSON THOMSON, M.D., CH.B., D.P.H. (Hons), B.Hy. (Hons)
F.R.S.I., F.R.I.P.H., F.I.H. (Lecturer in Practical Public Health Administration
and Intern Examiner, Queen's University, Belfast).

Assistant Medical Superintendent Officer of Health, Assistant Port Medical Officer, and Executive Sanitary Officer :

SAMUEL BARRON, M.R.C.P., D.P.H.

Chief Tuberculosis Officer :

ANDREW TRIMBLE, M.B., D.P.H., J.P., Medical Adviser Belfast Insurance
Committee.

Chief School Medical Officer :

THOMAS F. S. FULTON, M.B., B.Ch., D.P.H.

Medical Superintendent, Purdysburn Fever Hospital :

A. GARDNER ROBB, M.B., B.Ch., D.P.H., Visiting Medical Officer, Belfast
Union Fever Hospital.

Resident Medical Superintendent, Municipal Sanatorium, Whiteabbey :

PERCY S. WALKER, M.D., B.Ch., D.P.H.

Visiting Surgeon, Municipal Hospital for Tuberculous Children, Graymount:

HENRY P. MALCOLM, M.C., M.B., M.Ch.

City Bacteriologist :

GEORGE F. TINSDALE, M.B., B.Ch., B.Sc.

Maternity and Child Welfare Medical Officers :

OLIVE M. DARLING, M.B., B.Ch., D.P.H. (part-time).

OLIVE M. ANDERSON, M.B., B.Ch., B.A.O. do.

ANNA WATSON, M.B., B.Ch., B.A.O., D.P.H. do.

Veterinary Inspector, Diseases of Animals Acts :

J. EWING JOHNSTON, M.B.E., M.R.C.V.S. (part-time).

City Veterinarian and Veterinary Inspector of Dairies and Cowsheds :

Captain J. McCLURE BARRY, M.R.C.V.S.

Public Analyst :

J. HAROLD TOTTON, B.A., B.Sc., F.I.C.

Assistant Tuberculosis Medical Officers :

J. SHAW, M.B., B.Ch., D.P.H.

T. R. V. IRWIN, MB., B.Ch., D.P.H.

E. P. DEWAR, L.R.C.P. Ed.

H. McMASTER, L.R.C.P. Ed., D.P.H.

Assistant School Medical Officers :

J. J. MURRAY, M.B., D.P.H.
 H. A. WARNOCK, M.D., D.P.H., B.Sc.
 MAUD McKNIGHT, M.B., D.P.H.
 EILEEN H. DOWSE, M.B., D.P.H. (part-time).

Resident Medical Officers :

T. PURCE, M.B., D.P.H., Purdysburn Fever Hospital.
 F. KANE, M.B., Purdysburn Fever Hospital.
 D. K. WATTERSON, M.D., D.P.H., Whiteabbey Sanatorium.
 M. H. ELLIOTT, M.B., D.P.H., Whiteabbey Sanatorium.

Visiting Medical Officer, Whiteabbey Sanatorium :

J. C. RANKIN, M.D., B.Ch.

Ophthalmic Specialists, etc. :

T. W. G. HOGG, M.B., B.Ch. (part-time), School Medical Services.
 (Ophthalmic Specialist).
 I. A. DAVISON, B.A., M.D., D.P.H. (part-time), School Medical Services.
 (Ophthalmic Specialist).
 WM. S. GIBSON, M.B., B.Ch. (Hons.), (part-time), School Medical Services.
 (Aurist Specialist).

Dentists :

VIOLET M. E. GUY, M.B., B.Ch., B.D.S. (part-time), School Medical Services.
 C. H. MATTHEWS, L.D.S. do. do.
 A. S. IRVINE, L.D.S. do. do.
 T. J. GILMORE, L.D.S. do. do.
 O. BLACK, L.D.S. do. Tuberculosis Department.

Health Visitors and Nurses :

1 Superintendent of Midwives.
 11 Health Visitors.

Purdysburn Fever Hospital :

Matron—Miss P. E. SWARBRICK.
 Asst. Matron—Miss M. WARD.
 12 Ward Sisters.
 24 Nurses.

Whiteabbey Sanatorium :

Matron—Miss E. WOODS, S.R.N.
 5 Sisters.
 5 Staff Nurses.
 20 Probationers.

Municipal Hospital for Tuberculous Children, Graymount :

Matron—Miss A. E. LYNESS, S.R.N.
 1 Sister.
 3 Staff Nurses (temporary).
 6 Probationers.

Sanitary Staff :

- Divisional Inspector, W. J. SEFTON—South Division.
do. do. J. B. BOYD—North Division.
do. do. S. DENNISON—West Division.
do. do. W. J. DAVISON—East Division.
- 14 District Sanitary Sub-Officers.
3 Sanitary Sub-Officers—Factory and Workshops—1 Male and 2 Female.
2 Dairies, Cowsheds and Milkshops Inspectors (one of whom is employed part-time under Diseases of Animals Acts).
4 Sale of Food and Drugs Acts Inspectors.
4 Meat Inspectors at Municipal Abattoir.
2 Meat Inspectors at shops, etc., in city.
1 Port Sanitary Officer.
1 Lodging House Inspector.
1 Inspector i/c. Disinfectors.
4 Assistant Disinfectors.
1 Manager, Disinfecting Station.
1 Assistant Disinfecter, Disinfecting Station.
1 Assistant (Female), at Disinfecting Station.
1 Motor Driver, at Disinfecting Station.
2 Assistant Drain Testers.
1 Storeman.
1 Messenger and Time Clerk.
1 Notice Server.

District Medical Officers of Health (part-time) who are the Dispensary Medical Officers under the Poor Law :

No. 1	Dispensary District—	Dr. H. A. SKILLEN.
2	do. do.	Dr. D. KINLEY.
3	do. do.	Dr. H. D. OSBORNE.
4	do. do.	Dr. W. BURNS.
5	do. do.	Dr. R. HALL.
6	do. do.	Dr. G. SCARLETT.
7	do. do.	Dr. D. WILSON.
8	do. do.	Dr. C. J. MILLIGAN.
9	do. do.	Dr. J. KENNEDY.
10	do. do.	Dr. J. FULTON.
11	do. do.	Dr. R. J. MUNN.
12	do. do.	Dr. J. D. HAMILTON.
13	do. do.	Dr. H. R. IRVINE.
14	do. do.	Dr. W. D. DONNAN.
15	do. do.	Dr. T. J. KERR.
16	do. do.	Dr. T. E. HILL.

PROFESSIONAL NURSING IN THE HOME.

“The Society for Providing Nurses for the Sick Poor, Belfast,” employs a staff of eleven nurses for district work. The nurses visit the poor in their own homes and in cases of illness apply such ministration and assistance as may be required. Members of the medical profession as well as the clergy of all denominations are invited to bring deserving cases under the notice of the District Matron, but no case can be regularly attended by a nurse unless seen by a doctor.

The Society is dependent upon voluntary subscriptions and gifts in kind to enable it to carry on the magnificent work of alleviating human suffering and caring for the sick poor.

A reference to the Society's Annual Report for 1929 shows that 69,426 visits were paid by nurses to patients in their homes. This work deserves the support of the charitable public of Belfast.

The Corporation has no working arrangement with the Society, but any cases referred by the Medical Officers of the Public Health services have always received the willing attention of the district nurses.

The district nurses do not attend infectious cases. It is hoped that in the near future the Corporation will come to an arrangement for the home nursing of cases of Measles, Whooping Cough, etc., by the district nurses. Such an arrangement would relieve hospital strain during an epidemic and would also tend to lessen the mortality rate of these diseases.

MIDWIVES.

The Corporation does not employ or pay a subsidy to practising midwives in the City. The Poor Law Guardians employ 15 Dispensary Midwives for district work. During the year the Dispensary Midwives attended 804 confinements in their dispensary districts. In order to assist practising midwives, the Corporation, under certain circumstances, pay the fees of any doctors who may be called in emergency cases by the midwives.

During the year the services of medical practitioners were requisitioned by midwives in 371 emergency cases. The Corporation paid in fees £39 17s. to medical practitioners for their attendances at emergency cases.

During the year 207 midwives gave the required notice of their intention to practise, of these 177 were certified by examination and 30 otherwise certified.

In order to ensure compliance with the Rules and Regulations of the Joint Nursing and Midwives' Council, the midwives were visited at intervals throughout the year by the Superintendent of Midwives, both at their homes and also at the homes of cases being attended by them. Special attention was given to the personal cleanliness of the midwives and the condition of their homes and the necessary appliances. The registers containing the entries of births attended by them were examined, and were, with very few exceptions, found to be correctly kept.

A number of breaches of the Rules and Regulations were discovered and reported to the Maternity and Child Welfare Committee.

46 cases of Ophthalmia Neonatorum occurred during the year. All of these completely recovered.

71 cases of Inflammation of Eyes occurred during the year.

In cases where artificial feeding was resorted to instructions as to the absolute necessity of cleanliness of the bottles and teats were given. Mothers were also advised to take advantage of the Child Welfare Centres, the benefits both to themselves and their infants being explained to them.

SUMMARY.

Number of Midwives who notified their intention to practise:—

Certified by examinations	.....	.....	.....	.....	177
Otherwise certified	.....	.....	.....	.....	30
					<hr/> 207

SUMMARY OF VISITS AND GENERAL INFORMATION WITH RESPECT TO THE
ENFORCEMENT OF THE PROVISIONS OF THE ACT AND RULES AND
REGULATIONS MADE PURSUANT THERETO.

Visits by Superintending Midwife:—

To Midwives certified by examination	.....	.....	.....	420	
To Midwives otherwise certified	.....	.....	.....	100	
Total Visits to Midwives	.....	.....	.....	520	
To cases attended by Midwives	.....	.....	.....	434	
To Maternity Nursing Homes	.....	.....	.....	30	
To unregistered women found practising	.....	.....	.....	14	

Births investigated:—

Attended by Medical Practitioners	.....	.....	.....	.....	2,682
„ by Midwives certified by examination	.....	.....	.....	.....	3,360
„ by Midwives otherwise certified	.....	.....	.....	.....	305
„ in Union Maternity Hospital	.....	.....	.....	.....	706
„ in other Maternity Hospitals	.....	.....	.....	.....	570
„ by Nurses from Maternity Hospitals	.....	.....	.....	.....	576
„ in Malone Place Home	.....	.....	.....	.....	118
„ Thorndale Home	.....	.....	.....	.....	49

Notifications received by Medical Superintendent Officer of Health:—

Under Form A.—Sending for Medical help	.....	.....	.....	.....	371
„ „ B.—Notification of Death	.....	.....	.....	.....	8
„ „ C.—Notification of Still birth	.....	.....	.....	.....	256
„ „ D.—Notification of having laid out a Dead Body	.....	.....	.....	.....	8
„ „ E.—Source of Infection	.....	.....	.....	.....	4
„ „ F.—Artificial Feeding	.....	.....	.....	.....	56

Irregularities:—

Number of Midwives reported to Medical Superintendent Officer of Health or Maternity and Child Welfare Committee	.....	.....	.....	.....	23
Practising without being registered	.....	.....	.....	.....	5
Number of Midwives suspended	.....	.....	.....	.....	24
„ „ prosecuted for breach of Rules	.....	.....	.....	.....	2
„ „ reported to Joint Nursing and Midwives' Council for breach of Rules	.....	.....	.....	.....	4

Number of Midwives disinfecting owing to—

Puerperal Fever	.....	.....	.....	.....	18
Scarlet Fever	4
Typhoid Fever	1
Diphtheria	1

Number of Midwives who died	2
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Attention is drawn to the apparent discrepancy between the number of Births (9,401) appearing in the first paragraph of page 45, and the figure 9,079 appearing on page 5 (Summary of Vital Statistics).

The difference is accounted for as follows :-

The figure 9,079 includes live births only ; to this must be added 256 stillbirths and 66 registered unnotified births, making a total of 9,401 births notified.

NOTIFICATION OF BIRTHS ACT.

9,401 births, including 256 stillbirths and 304 illegitimate births, were notified during the year, pursuant to the Notification of Births Act; 4,803 of these were males and 4,595 were females, and in 3 instances the sex was not stated.

Of the total number notified 8,366 were selected for visitation and supervision, and during the year 34,775 visits were made.

On visiting a house where a birth has taken place the Health Visitor makes enquiries regarding the family history and with respect to the conditions obtaining in the home. She also makes an examination of the sanitary arrangements, and if any defect is discovered immediate remedial measures are taken.

She gives advice and instructions as to the care of infants and young children, the preparation of food and the storage of milk, butter, &c., and the precautions to be taken to prevent infectious disease.

For a period of twelve months the child is kept under special supervision and its progress recorded, and the mother is advised to attend the Child Welfare Centre in the district in which she resides. After this period there is a general supervision exercised by the Officers in the district, and if children are delicate or not thriving they are kept under supervision as long as is considered necessary.

MATERNITY AND CHILD WELFARE.

There were six Centres in operation during the year, situated at Donegal Road, Dee Street, Danube Street, York Street, Shankill Road, and Falls Road. Each Centre was open one afternoon in the week, when a Medical Practitioner, a properly trained and qualified Nurse, and a Health Visitor, together with several voluntary workers, were in attendance.

The work of the Centres consists of a thorough medical examination of babies and medical advice as to their treatment where such is required. Each baby is weighed periodically and the weight recorded in order to ascertain the progress being made and to assist in the discovery of defects or ailments at the earliest possible moment and thus prevent or check any disease which may impede its progress or have a detrimental effect upon its after life. Consultations are held with mothers with respect to their health, and they are advised and instructed in the care of infants and young children and are supplied with instructive literature on the subject. Food, such as Ostermilk, Trufood and Glaxo, is supplied at cost price and free to cases where it is considered the circumstances warrant it. In addition to assisting in the regular work of the Centres, the ladies who assisted voluntarily throughout the year very kindly provided suitable clothing for babies at a nominal charge.

The following table shews the number of names on the roll of each Centre, and the total number of attendances during the year, also the number of babies medically examined and the total number of examinations:—

TABLE No. 11.

Centre.	On Roll.	Total No. of attendances.	Babies medically examined.	Total medical examinations of babies.
Danube Street	683	6,028	699	1,642
Donegall Road	442	3,751	292	616
Dee Street	868	8,242	515	1,546
York Street	623	5,112	604	2,505
Shankill Road	739	11,395	477	1,010
Falls Road	786	6,561	496	2,235
	<hr/> 4,141	<hr/> 41,089	<hr/> 3,083	<hr/> 9,554

In 1928 the total number on the rolls was 4,173 and the total number of attendances 41,826. 2,619 babies were medically examined, the total number of such examinations being 6,783.

During the year 1929 4,686 lbs. of Glaxo, 1,609 lbs. of Virol, 2,003 lbs. of Ostermilk, 1,433 lbs. of Trufood, 59 lbs. Humanised Trufood, and 879 lbs. Aberdeen Emulsion were distributed.

In the preceding year 8,724 lbs. of Glaxo, 6,244 lbs. of Virol, 408 lbs. of Trufood and 206 lbs. of Aberdeen Emulsion were supplied either at cost price or free to necessitous cases.

During the year 1929 381 recipients were supplied free with 55,092 pints of sweet milk.

TABLE No. 12.

Table shewing the Deaths of children under one year old per 1,000 births each year from 1881-1929.

Year.	Deaths per 1,000 Births.	Year.	Deaths per 1,000 Births.
1881	136	1906	144
1882	151	1907	136
1883	162	1908	147
1884	126	1909	139
1885	170	1910	143
1886	135	1911	128
1887	163	1912	129
1888	145	1913	144
1889	163	1914	143
1890	162	1915	137
1891	149	1916	113
1892	173	1917	130
1893	160	1918	144
1894	160	1919	113
1895	169	1920	132
1896	148	1921	115
1897	166	1922	94
1898	164	1923	101
1899	161	1924	107
1900	152	1925	104
1901	154	1926	112
1902	151	1927	101
1903	134	1928	103
1904	154	1929	112
1905	136		

NOTIFICATION OF BIRTHS ACT.

SUMMARY.

Cases investigated .....	.....	.....	.....	.....	.....	.....	8,366
„ visited a second time .....	.....	.....	.....	.....	.....	.....	6,517
„ „ third time .....	.....	.....	.....	.....	.....	.....	5,419
„ „ fourth time .....	.....	.....	.....	.....	.....	.....	4,291
„ „ fifth time .....	.....	.....	.....	.....	.....	.....	3,277
„ „ sixth time .....	.....	.....	.....	.....	.....	.....	2,492
„ „ seventh time .....	.....	.....	.....	.....	.....	.....	1,624
„ „ eighth time .....	.....	.....	.....	.....	.....	.....	1,101
„ „ ninth time .....	.....	.....	.....	.....	.....	.....	668
„ „ tenth time .....	.....	.....	.....	.....	.....	.....	340
„ „ eleventh time .....	.....	.....	.....	.....	.....	.....	186
„ „ twelfth time .....	.....	.....	.....	.....	.....	.....	111
„ „ thirteenth time .....	.....	.....	.....	.....	.....	.....	78
„ „ fourteenth time .....	.....	.....	.....	.....	.....	.....	57
„ „ fifteenth time .....	.....	.....	.....	.....	.....	.....	47
„ „ sixteenth time .....	.....	.....	.....	.....	.....	.....	36
„ „ seventeenth time .....	.....	.....	.....	.....	.....	.....	25
„ „ eighteenth time .....	.....	.....	.....	.....	.....	.....	20
„ „ nineteenth time .....	.....	.....	.....	.....	.....	.....	16
„ „ twentieth time .....	.....	.....	.....	.....	.....	.....	13
„ „ twenty-first time .....	.....	.....	.....	.....	.....	.....	10
„ „ twenty-second time .....	.....	.....	.....	.....	.....	.....	7
„ „ twenty-third time .....	.....	.....	.....	.....	.....	.....	7
„ „ twenty-fourth time .....	.....	.....	.....	.....	.....	.....	6
„ „ twenty-fifth time .....	.....	.....	.....	.....	.....	.....	4
„ „ over twenty-five times .....	.....	.....	.....	.....	.....	.....	57
							34,775

Number of visits re Infant Mortality .....	.....	.....	.....	.....	.....	955
„ visits to Child Welfare Centres .....	.....	.....	.....	.....	.....	628
„ visits to sick babies .....	.....	.....	.....	.....	.....	590
„ visits re Infectious Disease .....	.....	.....	.....	.....	.....	868
„ visits to expectant mothers .....	.....	.....	.....	.....	.....	322
„ visits to nurses .....	.....	.....	.....	.....	.....	36
„ visits to handy women .....	.....	.....	.....	.....	.....	5
„ miscellaneous visits .....	.....	.....	.....	.....	.....	2,263
„ visits to mothers .....	.....	.....	.....	.....	.....	310
„ visits to children over 1 year .....	.....	.....	.....	.....	.....	4,762
„ visits to school children .....	.....	.....	.....	.....	.....	9
„ visits re Tuberculosis .....	.....	.....	.....	.....	.....	20
„ visits re Ophthalmia Neonatorum .....	.....	.....	.....	.....	.....	545
„ unsuccessful visits .....	.....	.....	.....	.....	.....	1,978

TABLE No. 13.

NOTIFICATION OF BIRTHS ACT.

ANALYSIS OF PARTICULARS RESPECTING BIRTHS

INVESTIGATED DURING THE YEAR 1929.

Centre No.	Legitimate		Illegitimate		Born at Full Time		Premature		Stillborn		MOTHER							FATHER								
	M. F.		M. F.		M. F.		M. F.		M. F.		M. F.		Whether employed during Pregnancy							Average Weekly Wages						
													Period Employed							20s. & under 25s. 25s. & under 30s. 30s. & under 35s. 35s. & under 40s. 40s. & under 45s. 45s. & under 50s. 50s. & over						
1 month	2 months	3 months	4 months	5 months	6 months	Over 6 months	Under 20s.	20s. & under 25s.	25s. & under 30s.	30s. & under 35s.	35s. & under 40s.	40s. & under 45s.	45s. & under 50s.	50s. & over	Under 20s.	20s. & under 25s.	25s. & under 30s.	30s. & under 35s.	35s. & under 40s.	40s. & under 45s.	45s. & under 50s.	50s. & over				
1	823	792	33	19	829	796	27	15	8	12	1	1	7	13	4	3	14	53	89	37	34	26	207	40	204	
2	653	642	51	32	683	657	21	17	29	25	1	16	23	16	21	46	155	11	6	20	17	113	165	153	152	
3	963	936	21	30	936	922	48	44	54	27	3	11	17	19	18	48	169	26	12	15	24	158	172	11	102	
4	705	633	34	27	713	647	26	13	23	21	1	3	9	14	19	24	50	33	25	27	25	91	32	4	152	
5	409	376	13	9	406	374	16	11	11	15	1	4	10	4	5	13	46	11	25	23	42	72	77	17	24	
6	557	573	20	15	559	574	18	14	19	12	1	3	9	11	3	11	69	32	29	36	29	34	75	11	51	
	4110	3952	172	132	4126	3970	156	114	144	112	8	38	75	77	70	145	503	166	186	158	171	494	728	236	685	

MATERNITY AND CHILD WELFARE.

The Ministry of Home Affairs, in their letter dated 13th January, 1930 (concerning the composition of the Medical Superintendent Officer of Health's Annual Report) calls for a statement as to the development of the Maternity and Child Welfare Scheme of the Corporation.

The Registrar-General gives the number of births for the year 1929 as 8,899 and the number of deaths of infants under one year old as 1,000; this yields an **Infant Mortality Rate** of 112 per 1,000 registered births.

During 1929 I presented a Scheme (duly passed by the City Council but not sanctioned centrally) which was to cost approximately £16,000. About that time one heard a criticism to the effect that the infant mortality rate had been rated too highly and that the overstatement was due to the fact that allowance did not seem to have been made for the deaths of several infants in the case of a number of unmarried expectant mothers who came specially to Belfast for their confinements. It is quite true that a number of such expectant mothers do come to Belfast and that some of the babies born die. The closest co-operation, however, exists between the Registrar-General and the Medical Superintendent Officer of Health. As a result cases of infants dying under these circumstances are transferred to their "place of origin" and are not counted in Belfast statistics. In a very small proportion of cases, such a transfer is not possible as the place of origin of the mother is not definitely known. The total number of infants which die and which were born of mothers coming to Belfast is less than 70 per annum and but a few of these are left untransferred. Any adverse balance in the way of infant deaths is neutralised inasmuch as Belfast is credited each year with a number of births in the case of expectant mothers confined in Belfast and whose outside place of origin is not known and cannot be ascertained. Births from "outside" mothers are transferred back to their town of origin, but where a false address is given by a woman entering, say, the Union for her confinement, such a birth has to be credited to Belfast.

To quote the Registrar-General:—

"The number of births and deaths in urban areas are exclusive of births and deaths among persons normally resident without these areas. Similarly births and deaths belonging to Belfast and occurring outside are transferred inward." I trust it will, therefore, be clear that this pitfall has been quite apparent and that the rate quoted, 112, is correct.

TABLE No. 14

INFANT MORTALITY RATES OF CERTAIN CITIES.

City.	Population.	Infant Mortality Rate for five years.				
		1925	1926	1927	1928	1929
BELFAST	415,151	104	112	101	103	112
GLASGOW	1,147,180	—	104	107	107	107
DUBLIN	319,700	117	118	122	103	107
SHEFFIELD	515,400	83	78	89	73	88
BRADFORD	288,500	94	91	91	70	80
LEEDS	476,000	87	87	77	77	97
MANCHESTER	755,900	92	83	82	90	97
LIVERPOOL	866,000	99	104	94	94	96
EDINBURGH	428,454	96	80	80	75	80
ABERDEEN	158,969	—	96	105	94	95
WEST HAM	300,860	58	56	60	64	74
DUNDEE	172,214	126	103	138	102	102
NEWCASTLE-ON-TYNE	281,500	79	78	75	82	85
DEPTFORD	113,800	63	56	58	60	76

From the Table herewith it must be clear that we have some leeway to make up in child welfare. Those who are acquainted not only with Belfast, but also with the cities named in the above Table, must realise that there is something wanting here. Belfast is a fine city; it has no important slum question, no serious housing difficulty; it has wide streets and a most generous provision of parks and open spaces. It all comes back to the question of an educated motherhood, and as I shall show below our present provision for ensuring this is relatively weak.

Now the occurrence of an epidemic of Influenza, with its disastrous effects on the lungs and nervous system alike of the young and old, makes it clear that the infant death rate of 112 is unusual and is due to special circumstances. A glance at the Table of causes of infant deaths shows that no fewer than 205 infants died from Pneumonia and 71 from Bronchitis. In 1928, when there was no epidemic of Influenza, the deaths from Pneumonia were 186 and from Bronchitis 61, a number smaller by 19 and 10 respectively than in 1929; there is, therefore, a question to be answered as to why so many babies die from Pneumonia and Bronchitis.

Need of Knowledge. In presenting this my first annual report on Maternity and Child Welfare to your Council it is essential that the subject should be dealt with fully in view of its great importance.

Darwinism and infant mortality. There are still some people in the world who believe that a high mortality and slum conditions provide for the removal of the surplus population and for "the survival of the fittest." Unfortunately many of those babies who survive are maimed in the process and become a charge in whole or in part on the country. It is wrong to imagine that all who survive must therefore be gladiators.

As I have stated above, there is neither a serious housing nor slum problem in Belfast, but there is much need for the education and care of the expectant mother. A baby's environment is its mother; its life is in her hands. Take away 100 young babies from their mothers and send them to be nursed by strangers—which means artificial feeding, etc.—then watch the percentage of deaths which accrues. Begin with the care of the expectant mother and the infant which follows will have been given a fine start in life. To quote from Sir George Newman's book on "Infant Mortality"—"This book will have been written in vain if it does not lay the emphasis of this problem upon the vital importance to the nation of its motherhood. Wherever we turn, and to whatever issue, in this question of infant mortality, we are faced with one all-pervading primary need—the need of a high standard of physical motherhood. Infant mortality in the early weeks of life is evidently due in large measure to the physical conditions of the mother, leading to prematurity and debility of the infant; and in the later months of the first year infant mortality appears to be due to unsatisfactory feeding of the infant. But from either point of view it becomes clear that the problem of infant mortality is not one of sanitation alone, or housing, or indeed of poverty as such, but is mainly a question of motherhood. No doubt external conditions, as those named, are influencing maternity, but they are in the main affecting the mother, and not the child. They exert their influence upon the infant indirectly through the mother. Improved sanitation, better housing, cheap and good food, domestic education, a healthy life of body and mind—these are the conditions which lead to efficient motherhood from the point of view of child-bearing. They exert but an indirect effect on the child itself, who depends for its life in the first twelve months, not upon the State or the Municipality, not yet upon this or that system of crèche or milk feeding, but upon the health, the intelligence, the devotion and maternal instinct of the mother, and if we would solve the great problem of infant mortality, it would appear that we must first obtain a higher standard of physical motherhood. Without a moment's hesitation, I place this need as the first requirement. Other things, as we have seen, are important, but this is the chief thing, and, therefore, in the consideration of any measures for reducing the infant mortality, we must first attempt to solve the problem through the mother."

To this may be added the quotation from a former President of the Local Government Board:—"First, concentrate on the mother. What the mother is the children are. The stream is no purer than its source. Let us glorify, dignify, and purify motherhood by every means in our power. Let us see to the nursing child in every way; nourish the mother, you feed the child. In every aspect of this subject let us have good mothering; that is at the bottom of happy, healthy children."

Sufficient has been said to give the key to the whole problem in Belfast. Are our expectant mothers educated in mothercraft? What facilities have they for such education? Mothercraft should be taught in part before the baby is born, that is, at ante-natal centres.

Need of Ante-Natal Centres. We have no Municipal Ante-Natal Centres. There are three hospital ante-natal centres in the city. The number of new cases examined at these during 1929 was:—

The Maternity Hospital, Townsend Street	1,514
The Midnight Mission, Malone Place	86
The Ulster Hospital, Templemore Avenue	222

(All these, of course, received several repeat examinations). We find, then, a total of 1,822 expectant mothers, out of 8,987 who received ante-natal attention. It is not possible to state how many of the remaining 7,165 received ante-natal care from their private medical attendants, but I am advised that probably 70 per cent. of expectant mothers are not receiving ante-natal examination and supervision; this is very serious and it can only be met by educating people up to the great need there is for such attention. Future mothers as well as existing mothers should be taught mothercraft. Girls who learn cookery, housework, laundry work, needlework, and mothercraft are well equipped for future eventualities. The mother's is a skilled trade. How many young women who marry are qualified to run a house? As regards existing mothers, what can be done to improve their efficiency?

In connection with Maternity and Child Welfare Centres, sewing and cookery classes should be established. As far back as 1917, 286 of such institutions were receiving grants from the Board of Education in England and Wales. Classes could be held for mothers, under the Education Committee, at the schools which the daughters attend. Afternoon lectures should be given to existing mothers in cookery, laundrywork, housecraft, needlework (dress-making, tailoring, millinery), hygiene, first-aid, home nursing, and maternity. These lectures could be popularised by getting into touch with Women's Associations, e.g., Mothers' Meetings, Women's Institutes, Women's Co-Operative Guilds, etc. The lectures could be given in a Church or Chapel Hall, Elementary School, Public Hall, etc., etc.

SOME GENERAL CONSIDERATIONS.

The latest text book on Hygiene is written by Dr. J. R. Currie, M.A. (Oxon.), M.D. (Glasgow), M.R.C.P. (Edin.), etc., Professor of Public Health in Glasgow University; it was published in 1929. Some notes from his chapter Maternity and Child Welfare will lend strength to the arguments I brought forward in my Special Report several months ago and in the recommendations I make at the end of this section on Maternity and Child Welfare. Professor Currie writes:—"Ante-natal life extends from the moment of conception to the conclusion of the date of birth. Recognisable ante-natal deaths are styled abortions, miscarriages, or still-births, according to the stage of advancement of pregnancy. Abortion is the expulsion of the ovum before the commencement of the fourth lunar month and before the formation of the placenta. Miscarriage

occurs from the commencement of the fourth to the end of the seventh lunar month before the foetus is viable (able to be born alive). Stillbirth is the dead birth of a viable child, from the commencement of the eighth lunar month, whether premature or full-term. Stillbirths amount to 30 per 1,000 live births. Abortions and miscarriages may be put at 180 per 1,000 live births, though higher estimates may be given. The total ante-natal deaths substantially exceed 210 per 1,000 live births." (In Belfast in 1929 the département learned of 256 stillbirths. A total of not less than 1,000 ante-natal deaths must have accrued in the city in 1929; how much suffering does this represent and how much of it could be averted?)

CAUSES.

Professor Currie quotes a Table by Dr. E. Holland on "Causes of Ante-Natal Deaths." 16 per cent. are due to syphilis: 10 per cent. are due to the toxæmia of pregnancy: 51 per cent. are due to complications of labour. As regards syphilis, in Glasgow the number in a recent enquiry was 7 per cent.; in Edinburgh 11.1 per cent. (In Belfast we treat Venereal Diseases at different hospitals but no public instruction has as yet been organised. We need Health Weeks, and V.D. films and lectures for men and for women, separately. The complications of labour, over all, are the dominant factor in ante-natal mortality. Difficult labour, syphilis, and toxæmia can be dealt with by attendance at an ante-natal centre.

On the subject of ophthalmia neonatorum, month after month I report several cases to the Maternity and Child Welfare Committee. At ante-natal centres the cause of ophthalmia neonatorum in babies would be detected in the examination of the mothers and the number of cases would fall. (There are, of course, cases of ophthalmia neonatorum in infants not due to disease in the mother.)

Neo-Natal Mortality. Neo-Natal deaths are those which take place within the first month of independent existence, that is, after the birth. Taking ante-natal and neo-natal deaths together the total deaths accreditable to ante-natal causes stand substantially in the region of 240 per 1,000 live births. Supporting Professor Currie's view that the common causes of neo-natal deaths are severe head injuries due to difficult labour, Drs. Holland and Lane Claypon, in a study of 1,408 ante-natal and neo-natal deaths give no less than 35 per cent. of deaths as due to difficult labour. Sufficient has been said to show the overwhelming need for more and more ante-natal work.

Causes of Infant Mortality. Professor Currie states that the most constant factor in the lives of infants by which their mortality rate is determined is maternal care. The infant death rate from digestive diseases is falling and the prevention of such deaths is a question of feeding—the mother's concern. The mother who feeds her baby every time it cries instead of by the clock, at defined intervals, cannot be surprised if her baby dies from gastritis and enteritis. Well directed maternal care implies maternal efficiency. Obviously mothers must be instructed and there must be a sufficient number of health visitors to instruct the mothers. "The adequate education of mothers in the hygiene of infancy, including the value of breast feeding, should save some lives of immature infants, reduce the number of respiratory deaths and prevent many of those now caused by diseases of the digestive system." Poverty and a high infant mortality rate go together in towns. Housing conditions are an admitted factor in infantile mortality but the style of the house matters more

than its state of repair, thus back-to-back houses and tenements (of which only a very few exist in Belfast) are factors favouring a high infant mortality rate. Industrial work by mothers is not a general cause of infant deaths. Illegitimacy is attended by high infant mortality, as the illegitimate infant is usually cared for by strangers and is usually bottle fed, with frequently digestive diseases ensuing.

Maternal Mortality. Maternal mortality is usually expressed as the number of maternal deaths per 1,000 live births.

The following are the rates for Scotland, England and Wales, and Belfast:

Year	Scotland	England and Wales	Belfast
1923	6.4	3.81	—
1924	5.8	3.90	—
1925	6.2	4.08	—
1926	6.4	4.12	—
1927	6.4	4.11	—
1928	7.0	4.42	—
1929	—	—	5.2

The higher rates of Scotland throughout by comparison with England and Wales are due, in part, to differences in the procedure adopted by the Registrars-General of the two countries. The Scottish figures include various causes of death which in England and Wales are not grouped as puerperal. In giving the rate for Belfast for 1929 as 5.2 I have to say that until I ascertain the list of diseases, deaths from which are grouped under Maternal Mortality, I cannot express any opinion as to the rate given for 1929. Further, during the first six months of 1929, 21 deaths were ascertained from Maternal Mortality. During the last six months of 1929 the number was 26. As and from July 1st, 1929, full enquiry was made into every death from Maternal Mortality by the department. No reliable opinion can be expressed by the Health department as to the position of Maternal Mortality in Belfast. An accurate opinion will become increasingly available in view of the commencement of our enquiry scheme.

In the middle of 1929 the Belfast Health Department, at the instigation of the Ministry of Home Affairs, began an investigation into maternal mortality deaths. In Scotland the Scottish Departmental Committee on Puerperal Morbidity and Mortality recommended that every death occurring within four weeks after the termination of pregnancy should be fully investigated by a person designated by the local authority and the facts communicated to the Scottish Board of Health. Enquiry forms were issued for the guidance of medical investigators—the same thing has happened in Northern Ireland. All information received is strictly confidential and is available only for Public Health and scientific purposes. In Belfast, if not indeed in the whole of Northern Ireland, one thing is required that prevails in Scotland. The Statutory Schedule G. form of death certificate was altered as from August 1st, 1929, by Order in Council in such a manner as to enable registrars to draw the attention of medical officers of health to deaths requiring investigation. A panel containing the following words is now inserted in the form: “If the deceased was a married woman and the death was known to have occurred during pregnancy or within four weeks thereafter the certifier will indicate the fact by here inserting the word **Yes.**”

The Causes of Infant Deaths in Belfast in 1929.

The following Table gives the principal causes of death. The neo-natal deaths are those occurring in the first month of independent life. Notice that of 132 deaths from premature birth no fewer than 123 died in their first month. Of 159 from atrophy, debility and marasmus, 82 died in the first four weeks of life. Of 38 deaths from convulsions 10 died within a month.

Cause of Death.	Total Number	Deaths in first four weeks of life.
Premature birth	132	123
Atrophy, Debility and Marasmus	159	82
Congegnitral defects	36	9
Diarrhoeal diseases	141	7
Pneumonia	205	6
Bronchitis	71	2
Convulsions	38	10
Whooping Cough	66	3
Measles	21	—

Although neo-natal deaths (infants which die during the first four weeks of their lives) are reckoned amongst infant deaths (deaths from birth to one year old), nevertheless to get the **causes** of neo-natal deaths we have to go back to the ante-natal group. Look how seriously that statement affects us in Belfast; the Table above shows the large number of neo-natal deaths which we have from ante-natal causes. Study this with Professor Currie's statement—"The complications of labour are the main lethal factors in ante-natal and neo-natal deaths together." All this points to the fact that it is a crime for any Belfast woman to go forward to her confinement without efficient and steady ante-natal supervision; it means also that the lowering of the neo-natal death rate is to a certain extent dependent on the quality of the midwifery service; this again throws a great responsibility upon teachers of midwifery at our Schools of Medicine.

Now, with reference to the closer meaning of the causes of death. **Prematurity** conveys to the mind a child born before its time, "usually a small, unhealthy child." A distinguished writer says "We should see that the mother is well fed and able to rest for some weeks before confinement." Prematurity, in part, is due to poverty, insufficient food; a thin and badly nourished mother tends to produce a thin baby below weight. To combat prematurity we need ante-natal supervision; education of mothers by properly qualified Health Visitors; dinners for poor expectant and nursing women and children.

Atrophy, Debility and Marasmus are due to much the same causes as prematurity. Marasmus or wasting is often due to malnutrition arising from wrong feeding leading to gastric trouble. Artificial feeding carried out on wrong lines is frequently responsible. Syphilis is one cause of stillbirths. Diagnosis of this condition during pregnancy, leading to immediate treatment, is invaluable.

Pneumonia and Bronchitis are common among poorer children. Particularly during measles and whooping cough they are liable to contract bronchitis and pneumonia. Unfortunately infants are frequently taken out of doors insufficiently wrapped up on cold damp days. It is not uncommon to see women standing in the streets or at the doors of their houses, with babies in their arms, talking to the neighbours, and on Saturday nights especially the babies are often taken in trams to places of amusement, where they catch cold. Ignorance again. Treatment—education. Again I say that we must make the mother the central figure around whom we work both for the preservation of her own health and that of the child.

Diarrhoea is a serious cause of infant deaths; it is the name of a symptom of intestinal disturbance and results from the continual administration of food unsuited for the infant and from food infected in some way. Unsuitable food arises from maternal ignorance and from not keeping the food clean and fresh. The overwhelming majority who die have been artificially fed. Few breast-fed infants die in this way. Most deaths occur in the Autumn and Summer. A hot, dry summer ushers in infant deaths from diarrhoea. Rain washes the air, carries down dust, cools the earth, and removes surface pollution and with it harmful germs. A high temperature favours bacterial growth which latter infect milk. Flies abound and carry filth to milk and even direct to the mouths of babies as they lie in their perambulators. Uncovered milk invites pollution. Flies appreciate condensed milk owing to the excess of sugar. Poor and ignorant mothers use condensed milk, which is not cheap whatever may be thought to the contrary. The cure is for Health Visitors to insist on breast feeding. Refuse and accumulations must be removed promptly and dirty households must not be tolerated.

What We Need in Belfast—A Scheme.

I do not propose to go into our needs in this Report so fully as I did in my Special Report in January, 1930. The subject will be coming up again soon before the Committee.

The following is a brief resumé of our requirements:—

Staff.

(1) We require **one whole-time Medical Officer** with experience as House Surgeon or (and) House Physician in a hospital for sick children and with experience in ante-natal work; this is additional to the three part-time doctors on the staff. The additional Centres and sessions, named below, will make this clear.

(2) We have 11 female Officers engaged in Maternity and Child Welfare work. We require 9 additional Health Visitors.

In Circular (M. & C.W. 4) on Maternity and Child Welfare, the Ministry of Health stated (in Section 12 "Health Visitors") :—"As a result of their further experience, the Board consider that the standard of 500 births to each Health Visitor, which they have previously suggested, should be modified. The functions of a Health Visitor should comprise the visiting and supervision of of all children under school age in the districts needing attention; the visiting of expectant mothers who have attended at an ante-natal centre, or for whom visits are desirable; inquiry into stillbirths and the deaths of young children; and attendance at the centre to which women and children, including those whom she has visited in their homes, come for medical and hygienic advice. Where these duties are fully performed it appears to the Ministry that a district **with about 400 births a year will be as much as one Health Visitor can undertake**"

The number of births for 1926, 1927, 1928 and 1929 was, respectively :—10,356, 9,509, 9,356, and 8,899—in other words each Health Visitor has had to try and visit, not 400 births a year, but 941, 864, 850, and 808 (deduct from this, of course, some not visited in certain quarters of the city). Thus the work cannot be done as it should be. What chance is there of visiting toddlers and expectant women, stillbirths, etc., etc.? The new Health Visitors should have had hospital training (4 years "general" or 3 years in a children's hospital) and should hold the Certificate of the Central Midwives' Board, or Joint Nursing and Midwives' Council for Northern Ireland. None over 35 years of age should be appointed and a copy of the birth certificate should be produced. The appointment should be subject to a medical examination conducted by a lady doctor on your staff.

New Centres.

The existing Centres are housed in very unsuitable buildings.

(a) Probably Ballymacarrett is worst off for a good Centre. A new building is required and a tentative plan has been made for a joint Infant Welfare Ante-Natal Centre, and School Clinic, at an estimated cost of £7,000 (unfurnished). On the Maternity and Child Welfare side this Centre should comprise a verandah for perambulators, central hall, waiting rooms, doctor's consulting room, light therapy room and dressing cabinets, weighing room and distributing room for dried milk, ostermilk, etc., ante-natal examination room and dressing cabinets, dental room, dental recovery room, room for ophthalmic, and throat, nose and ear surgeon, room for treatment of V.D. in women, and dressing cabinets, retiring room for voluntary workers and Health Visitors, adequate lavatory accommodation for all concerned, dining room for expectant and nursing mothers, room for urine analysis, etc., caretaker's quarters.

(b) A similar Centre for Durham Street, except that no School Clinic would be attached.

These two Centres are urgently required and should be built without prejudice to necessary erections in other parts of Belfast to be undertaken later.

(c) Two additional Centres are required in the region of Ligoniel and Woodstock Road—the latter to serve Lagan Village, Nettlefield area, Willowfield area, and Woodstock.

(d) I advise that the Council arrange with and pay for ante-natal work to be done at the Maternity Hospital, Townsend Street; the Ulster Hospital for Children and Women, Templemore Avenue, and the Belfast Midnight Mission, Malone Place. Co-operative detail need not be discussed here.

Food.

In view of all the considerations set out above, of our high death rate and its causes, I recommend that the new Ballymacarrett and the new Durham Street Centres be provided with cookery appliances and that after enquiry into the circumstances of each applicant, dinners be provided for poor expectant and nursing mothers and that these be consumed at the Centres where they are cooked. A caretaker and wife (a good cook) are required for each Centre. According to their means a charge of 6d. or 3d. or nothing at all should be made to the mothers.

The following is the Enquiry Form to be filled in by applicants:—

COUNTY BOROUGH OF BELFAST.

MATERNITY AND CHILD WELFARE.

APPLICATION FOR DINNERS OR MILK.

1. Name of Applicant.....
2. Name and Age of Baby.....
3. Address
4. Number in family.....Ages.....
5. Number of persons employed.....
Average earnings of each person.....
6. Occupation of Father.....
7. If Father employed..... How long.....
8. If in receipt of unemployment benefit, etc.
Amount of unemployment benefit
- do. outdoor relief
- do. benefit from other sources
9. Total income of family.....
10. Rent of house.....
11. Are any rooms sublet, or are lodgers taken; if so,
income therefrom.....
12. Additional particulars, if any.....

Signature.....

Health Visitor.

Date.....19.....

Certificate of Medical Officer.

I hereby certify that a grant of dinners or milk is required for the above expectant (nursing) mother or baby on grounds of health.

Nature of illness or disability.....

Signature.....

Medical Officer, Child Welfare Centre.

Date.....19.....

Recommendation of M.S.O.H.

Date.....19.....

M.S.O.H.

Maternity and Child Welfare Committee's Decision.

Dated.....day of.....19.....

Chairman.

A Scale of Charges would be framed in connection with the supply of milk for infants, toddlers, and children up to 5 years of age, and meals for expectant and nursing mothers.

Milk.

I recommend that a sum of £4,000 be budgeted for the giving of milk to infants and toddlers; in the case of children between 3 and 5 years the voucher to be given only on a medical certificate signed by a Medical Officer on your staff to the effect that the milk is necessary.

A Form of Application is necessary and I recommend the scale given. Each voucher should last a month. A check should be made on every second or repeat application as to the statements made concerning the family wages.

In all cases where a qualified expectant or nursing mother cannot attend for her dinner at the Centre on account of illness, an approved person may call and get her dinner for her. The Health Visitor to check up the reason for absence by a visit.

Orthopaedic Clinic.

I advise the appointment of an Orthopaedic Surgeon to attend Durham Street Centre once a fortnight to examine all **commencing** or **suspected** or **actual deformed** conditions. The object is to stop at once the creation of cripples. Any doctor in the city to have a right to send a case to the Clinic but through the intermediary of the Medical Superintendent Officer of Health (to prevent congestion, etc.).

With the object of linking up Queen Street and Ulster Hospitals, a sum of £100 a year to each hospital should be earmarked, and a further sum of £150 for the year for convalescence at the Bangor Home of the Cripples' Institute. The Orthopaedic Clinic would be essentially a preventive Centre, not to be run in opposition to the hospitals. I have made an enquiry into 398 cases of crippling in the city.

Day Nurseries.

I recommend the establishment of one Day Nursery in Belfast. Glasgow has six.

Home Helps.

Through the Health Visitors a list of women of character should be kept of say ten or twenty of these.

Convalescence for Mothers.

I recommend that a sum of £300 be set aside towards the payment of convalescence after confinement, etc., of approved cases. I have no special Convalescence Home in mind at the moment nor do I know of any, but suggest that in approved cases a mother and infant should be sent to such as Bangor, even to a humble lodging, for a change. If we can obtain a few shillings towards payment from the case we should do so.

Maternity Bags.

A supply of these should be obtained for poor cases—applications to be made through the Health Department or at the Centres. Provision should be made for 50 of each for the ensuing financial year and a charge should be made for the same.

Infant Welfare Centres and Toddlers' Clinics.

Instead of six sessions I advise thirteen, namely, Shankill Road 2, Danube Street 2, Falls Road 2, Donegall Road 1, Ballymacarrett 2, York Street 2, Ligoniel 1, Woodstock 1.

Masseuse.

A qualified masseuse should be appointed not only to act for the Orthopaedic Surgeon, but when disengaged to take on cases sent in by our own Medical Officers, for flat feet, scoliosis, knock knee, bow legs, etc.

In conclusion, the coming fusion of all the Corporation's Health Visitors will not make up nor touch the question of the deficiencies of Maternity and Child Welfare Health Visitors. I propose gradually to give each Health Visitor whether Maternity and Child Welfare, Tuberculosis, or School, a section of the city to manage, but before this can be done the new Maternity and Child Welfare Health Visitors will require breaking in and the principal Medical Officers thereafter will give a course of lectures to each group of Health Visitors on Maternity and Child Welfare, School Medical, and Tuberculosis work.

TABLE No. 15

Deaths of Infants under One Year old from stated Causes in Weeks and Months, notified to this Department, during the year ended 28th December, 1929.

CAUSE OF DEATH.		Under 1 Week.		1-2 Weeks		2-3 Weeks		3-4 Weeks		Total under 1 Month		1-2 Months		2-3 Months		3-4 Months		4-5 Months		5-6 Months		6-7 Months		7-8 Months		8-9 Months		9-10 Months		10-11 Months		11-12 Months		Total Deaths under One Year		GRAND TOTAL.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Common Infectious Diseases	{	Small-pox
		Chicken-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Diphtheria: Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrheal Diseases	{	Whooping Cough
		Diarrhoea, all forms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Enteritis (<i>not Tuberculous</i>)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Gastritis, Gastro-Intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	
Wasting Diseases	{	Premature Birth
		Spina Bifida	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Other Congenital Defects	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Injury at Birth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Want of Breast-Milk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuber- culous Diseases	{	Atrophy, Debility, Marasmus
		Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Tuberculous Peritonitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Other Tuberculous Diseases
Tuber- culous Diseases	{	Erysipelas
		Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Meningitis (<i>not Tuberculous</i>)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Do, Cerebro-Spinal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Convulsions
Tuber- culous Diseases	{	Bronchitis
		Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Pneumonia	...	...	...	...	...	...	...	...	...	...	...												

Deaths occurring outside the City, of persons who normally resided in the City, not included.

LEGISLATION IN FORCE.

Public Health (Ireland) Acts, 1878 to 1907.

Housing of Working Classes Acts.

BELFAST CORPORATION LOCAL ACTS.

8-9 Vic., Cap.	cxlii (1845).
9-10 Vic., Cap.	ccvcix (1846).
10-11 Vic., Cap.	ccliv (1847).
13-14 Vic., Cap.	cviii (1850).
16-17 Vic., Cap.	cxiv (1853).
27-28 Vic., Cap.	cxcviii (1864).
28-29 Vic., Cap.	clxxxiii (1865).
29-30 Vic., Cap.	cxiii (1866).
31-32 Vic., Cap.	cxvii (1868).
36-37 Vic., Cap.	cxci (1873).
37-38 Vic., Cap.	cxxv (1874).
40-41 Vic., Cap.	cxxii (1877).
41-42 Vic., Cap.	clxxx (1878).
47-48 Vic., Cap.	xciii (1884).
50 Vic., Cap.	xxiii (1887).
50-51 Vic., Cap.	cxxvii (1887).
52-53 Vic., Cap.	xlii (1889).
53-54 Vic., Cap.	cv (1890).
53-54 Vic., Cap.	cxcii (1890).
54-55 Vic., Cap.	lvii (1891).
55-56 Vic., Cap.	ccx (1892).
55-56 Vic., Cap.	ccxxxix (1892).
59-60 Vic., Cap.	ccxli (1896).
60-61 Vic., Cap.	lxxxvi (1897).
61-62 Vic., Cap.	xliv (1898).
61-62 Vic., Cap.	liii (1898).
62-63 Vic., Cap.	ccxli (1899).
2 Ed. VII., Cap.	cix (1902).
4 Ed. VII., Cap.	ccxxix (1904).
8 Ed. VII., Cap.	cxxvi (1908).
10 Ed. VII., & 1 Geo. V. Cap.	xl (1910).
1 & 2 Geo. V., Cap.	cxc (1911).
2 & 3 Geo. V., Cap.	ix (1912).
3 & 4 Geo. V., Cap.	c (1913).
4 & 5 Geo. V., Cap.	xxxviii (1914).
13 & 14 Geo. V., Cap.	v (1923).
14 & 15 Geo. V., Cap.	iv (1924).
15 & 16 Geo. V., Cap.	iii (1925).

Port Sanitary Authority Local Government Board (Ireland) Provisional Orders Confirmation (No. 4) Act, 1900; 63 & 64 Vic., Cap. ccv.

The Belfast, Holywood and Castlereagh Joint Board, L.G.B. (Ireland) Provisional Orders Confirmation (No. 2) Act, 1905, 5 Edw. VII., Cap. cxxiii.

PUBLIC ACTS ADOPTED BY THE COUNCIL.

ACT.	DATE OF ADOPTION.
Baths and Washhouses Act, 1846	1st February, 1854.
Public Libraries (Ireland) Act, 1855	1st December, 1882 (By Plebiscite).
Public Health Acts Amendment Act, 1890 (Part III.)	1st January, 1891.
Infectious Disease (Prevention) Act, 1890	5th March, 1891.
Infectious Disease (Notification) Act, 1889	1st January, 1897.
Housing of the Working Classes Act, 1890 (Part 3)	1st November, 1897.
Notification of Births Act, 1907	2nd December, 1907.
Public Health Acts Amendment Act, 1907 (Parts 7, 8 and 9).....	By Order of Chief Secretary for Ireland, dated 9th May, 1908.
Public Health Acts Amendment Act, 1890 (Part 4)	{ 1st April, 1908. 1st May, 1908.
Museums and Gymnasiums Act, 1891 (So much as relates to Museums)	1st February, 1909.
Tuberculosis Prevention (Ireland) Act, 1908 (Part 1)	1st September, 1908.
Public Health Acts Amendment Act, 1907 (Parts 2, 3, 4, 5, 6, and 10)	By Order of L.G.B. for Ireland, dated 20th July, 1910.

BYE-LAWS AND REGULATIONS.

NATURE OF BYE-LAWS.	WHEN MADE.	WHEN CONFIRMED AND BY WHOM.
Advertising Vans	2nd May, 1887.	Confirmation Unnecessary.
Advertising Hoardings	4th Oct., 1889.	L.G.B., 19th Oct., 1900.
Aldermen and Councillors Non-Acceptance of Office	June, 1901.	Lord Lieutenant.
Art Gallery, &c.	1st June, 1905.	L.G.B., 14th Sept., 1905.
Abattoir, Butchers working in	1st July, 1909.	L.G.B., 26th Nov., 1909. L.G.B., 4th Nov., 1913.
Abattoir, Public—		
Management and Charges	1st Sept., 1913.	L.G.B., 4th Nov., 1913.
do.	3rd April, 1922.	Ministry of Home Affairs for Northern Ireland, 20th May, 1922.
do.	3rd Jan., 1927.	10th March, 1927.
do.	1st April, 1927.	13th May, 1927.
Baths and Wash-houses	5th April, 1904.	L.G.B., 16th May, 1904.
Buildings—New	1st Feb., 1890.	L.G.B., 30th April, 1890.
Buildings	1st Nov., 1928.	Ministry of Home Affairs for Nor- thern Ireland, 12th Dec., 1928.
Bicycles, etc.	1st Jan., 1898.	L.G.B., 13th Mar., 1898.
Betting in Streets	3rd Feb., 1902.	L. Lieut., 14th Mar., 1902.
Bowling Greens	1st July, 1926.	Ministry of Home Affairs, 23rd August 1926.
do.	2nd May, 1927.	2nd July, 1927.
Burial Grounds	3rd Jan., 1921. Amended 1st Feb., 1927.	L.G.B., 17th Jan., 1921.
Cattle Drovers	1st July, 1925.	Ministry of Home Affairs for Nor- thern Ireland, 1st Sept., 1925.
Coal, Sale of	1st Aug., 1919.	Board of Trade, 15th Sept., 1919.
Children—Prevention of Cruelty to	1st Aug., 1893.	L. Lieut., 6th Oct., 1893.
Children's Playgrounds	1st Nov., 1923.	Ministry of Home Affairs, 21st Dec., 1923.
Place of Safety, Nazareth House	1st June, 1906.	
Carriage Traffic—		
At Opera House	1st Jan., 1896.	
At Ulster Hall	1st Dec., 1894.	
At Rugby Football Grounds—		
Ravenhill Road	25th Jan., 1928.	
Carrick House	16th May, 1902	L.G.B., 26th July, 1902.

NATURE OF BYE-LAWS.			WHEN MADE.	WHEN CONFIRMED AND BY WHOM.
Conveyances Plying for Public Hire—			2nd Dec., 1867, and subsequent dates.	Chairman, Quarter Sessions, Jan., 1868, and subsequent dates.
Hackney Carriages	.....	.....	1st April, 1898.	Chairman of Quarter Sessions, 14th Oct., 1898.
do.	.....	.....	1st Sept., 1910.	Recorder of Belfast, 4th Nov., 1910.
do.	.....	.....	2nd April, 1918.	Recorder of Belfast, 18th June, 1918
do.	.....	.....	1st June, 1920.	18th Sept., 1920.
Motor Taxi Cab (Fares)	.....	.....	1st May, 1923.	Chairman of Quarter Sessions, 19th July, 1923.
do.	do.	.....	1st March, 1928.	Ministry of Home Affairs, 16th June, 1928.
Public Service Omnibuses	.....	.....	27th June, 1928.	
NOTE.—Under the provisions of the Motor Vehicles (Traffic and Regulation) Act (N.I.), 1926, the licensing of mechanically propelled Public Service Vehicles to ply for hire is, since the 1st July, 1927, done by the Minister of Home Affairs.				
Dogs, Wearing of Collars by	.....	.....	1st May, 1907.	Confirmation Unnecessary.
Dairies, Cowsheds and Milkshops	.....	.....	1st Sept., 1908.	
Drovers of Cattle (see Cattle Drovers).				
Female Domestic Servants' Registries	.....	.....	1st March, 1911.	Chief Secretary for Ireland, 27th April, 1911.
Factory and Workshop	.....	.....	20th June, 1916.	L.G.B., 2nd Aug., 1916.
Hoarding (Advertising)	.....	.....	4th Oct., 1899.	do. 19th Oct., 1900.
House Refuse, Removal of	.....	.....	1st Feb., 1909.	do. 8th April, 1909.
Ice Cream, Manufacture and Sale of	.....	.....	1st Feb., 1927.	Ministry of Home Affairs, 31st March, 1927.
Juvenile Street Trading (see Street Trading)				
Lodging Houses—				
Other than Common	.....	.....	1st May, 1876.	L.G.B., 7th June, 1876.
Seamen's	.....	.....	March, 1883.	Board of Trade, 17th March, 1883.
Common	.....	.....	2nd Nov., 1903.	L.G.B., 20th Jan., 1904.
Lights on Vehicles	.....	.....	1st Jan., 1901.	do. 18th April, 1901.
Lord Mayor, non-acceptance of Office	.....	.....	June, 1901.	L. Lieutenant, 8th February, 1902.
Locomotives—				
(Streets)	.....	.....	5th June, 1906.	L.G.B., 19th July, 1906.
(Hours)	.....	.....	1st May, 1914.	do. 15th June, 1914.
Markets	.....	.....	1st Feb., 1851.	Chairman Quarter Sessions, 12th April, 1851.
Grain and Meal Market	.....	.....	1st Sept., 1896.	do. 27th Oct., 1896.
Mortuary	.....	.....	1st Dec., 1895.	
Motor (Taxi) Cabs Plying for Hire	.....	.....	(see Conveyances	Plying for Hire).
Meat, Conveyance of	.....	.....	1st May, 1922.	Ministry of Home Affairs, 7th June, 1922.
Meat, Inspection of	.....	.....	1st Dec., 1913.	13th Feb., 1914.
Offensive Trades	.....	.....	2nd Nov., 1903.	20th Jan., 1904.
do.	.....	.....	2nd Nov., 1914.	11th Dec., 1914.
Public Parks General	.....	.....	1st Aug., 1923.	do. 27th Sept., 1923.
do.	.....	.....	2nd May, 1927.	do. 2nd July, 1927.
Public Parks	.....	.....	1st Nov., 1928.	do. 18th Dec., 1928.
Bellevue Gardens and Hazelwood	.....	.....	1st Aug., 1923.	Ministry of Home Affairs (N.I.), 27th Sept., 1923.
do.	.....	.....	2nd May, 1927.	do. 5th Aug., 1927.
Children's Playgrounds	.....	.....	1st Nov., 1923.	Ministry of Home Affairs, 21st Dec., 1923.
Regulation of Vehicular Traffic,				
Ormeau Park	.....	.....	2nd Oct., 1922.	Ministry of Home Affairs (N.I.), 4th Dec., 1922.
Piggeries	.....	.....	1st May, 1894.	L.G.B., 2nd Aug., 1894.
Public Libraries, Art Gallery and Museum	.....	.....	1st June, 1905.	do. Aug., 1905.
Public Sanitary Conveniences	.....	.....	2nd Nov., 1908.	do. 2nd Jan., 1909.
Places of Public Resort—Regulations re Ingress to and Egress from	.....	.....	1st Nov., 1909.	Confirmation Unnecessary.
	.....	.....	Amended 3rd Nov., 1913.	
School Attendance	.....	.....	2nd June, 1924.	Ministry of Education, 18th Aug., 1924.

NATURE OF BYE-LAW.	WHEN MADE.	WHEN CONFIRMED AND BY WHOM.
School Committee, Scheme regulating the Constitution, Powers, Duties and Procedure	2nd Jan., 1928.	
Spitting	4th Aug., 1903.	L. Lieut., 1st September, 1903.
Street Nuisances	6th Nov., 1903.	L. Lieut., 12th Oct., 1905.
Street Traffic	<div style="display: inline-block; vertical-align: middle;"> 1st June, 1904. 1st Feb., 1906. 1st Oct., 1917. 3rd Oct., 1927. 3rd Dec., 1928. </div>	Confirmation Unnecessary.
Street Trading (Juvenile)	1st Oct., 1925.	
Standing Orders of Council	2nd April, 1918, and revised subsequent dates.	
Sheep Scab	1st April, 1915.	
Sanitary Conveniences (see Public Sanitary Conveniences).		
Swimming Ponds—		
Regulations for use of	1st April, 1910.	
Lawn Tennis Courts	2nd Jan., 1922.	Lord Lieutenant, 9th January, 1922.
Tents, Vans, etc.	1st July, 1919.	
Tramways	2nd Oct., 1905.	Commissioner of Public Works, 2nd December, 1905.
Vehicles, Lights on	1st Jan., 1901.	L.G.B., 18th April, 1901.

SANITARY CIRCUMSTANCES OF THE AREA.

WATER SUPPLY.

1. During the past year there have been large extensions of Water Mains in New Streets and in Areas which are being developed for building purposes. A considerable length of 3" mains, which were laid many years ago, having proved inefficient and also subject to frequent repair, have been taken up and relaid with 5" pipes.

The construction work of the large Reservoir in the Silent Valley, Mourne Mountains, has progressed very favourably. This work will be completed and the Reservoir brought into service within the next 3 to 4 years. This Reservoir will afford adequate storage for the City's requirements, and will remove any possibility of a shortage during an excessively dry Summer.

2. There has not been found a single instance or complaint received of contamination of the city water. Professor W. J. Wilson, M.D., D.P.H., of Queen's University, is the duly appointed Director of Water Examinations. In all his reports, he has stated that the quality of the water is satisfactory, and the quantity available for use in the City has been equally satisfactory.

3. The Director of Water Examinations makes Bacteriological and Chemical examinations, at frequent intervals, of all waters brought into the City, and he reports to the Commissioners the results of such examinations.

The waters drawn from the Woodburn and Stonyford Catchments are subjected to efficient slow sand filtration. The water drawn from the Mourne Mountains and also from Wells situate at Ligoniel and Whitewell are subject to chlorination.

RIVERS AND STREAMS.

**Any Action Taken to Check the Pollution of Rivers or
Streams in the Area.**

The rivers and streams in the city have been examined each month during the year with the following results:—

Forth River; from Ballygomartin Road to Springfield Road. No nuisance has been discerned during the year. Ballygomartin filter bed effluent previously discharged into this river. During the year a new sewer was constructed along the West Circular Road which now takes the Ballygomartin sewage, and the use of the Ballygomartin sewage plant has, therefore, been dispensed with.

High Street River: No Nuisance.

Milewater; from Castleton Building Works to Alexandra Park. No nuisance detected.

Knock River: No nuisance detected.

Clowney River; from Broadway to Springfield Road. No Nuisance. Water closets from cotton mills discharge cesspools into river but give rise to no pollution.

Blackstaff River: Lisburn Rural District Council's storm overflows discharge sewage into the river, and, as the sewer may be overtaxed in order to cope with the number of houses recently built, the storm overflows are apt to be active too frequently. The question of pollution of the river is at present receiving attention.

Falls Park River: The following discharge into the river:—Water closets from Park and Industrial School; these discharge into cesspools and then into the river. The sewage of twelve houses previously draining into this river has recently been diverted to a new sewer.

Oldpark River; from Printworks to Shankill Road. No nuisance. Some discoloured water discharges from Oldpark Printworks.

Ligoniel River; from Wolfhill to Ballygomartin Road. No nuisance. The drainage passes through cesspools of three villas on Ligoniel Road and bleach from Glenbank Bleach Works. No evident pollution.

Parkmount; from Railway to Antrim Road. No nuisance.

Greencastle; from Railway to Antrim Road. No nuisance.

Seaview; from Railway to Antrim Road. No nuisance.

Pound Burn; from Grosvenor Road to Barrack Street. No nuisance.

Blackstaff River; from Dublin Road to Great Victoria Street: Good. From Paper Mill bridge to outlet at River Lagan: No nuisance.

Loop River; between Castlereagh Road and Cregagh Road. No nuisance.

Clonard Dam. For some years this dam, situated off Divis Street, has been a source of complaint; the nuisance is more marked during dry, warm weather at a point where the water is discharged over the sill of a weir into a disused

wheel pit. Here the water is disturbed and is broken up into a spray; this probably sets free or acts as a disseminator of an offensive effluvium. During dry weather the rivers which supply the dam are themselves deprived of the flow normally accruing in ordinary weather. Some seventeen manufacturing firms take their supply either from Oldpark and Glenwood rivers or from the Forth River; these firms impound the water in reservoirs in the upper reaches of the streams. When the supply of water is scanty the firms are unable to run off the water as frequently as can be done during wet weather. These firms also discharge the water which had become heated from being used for cooling purposes, into the dam, and this raises the temperature and undoubtedly is partly responsible for the odour complained of. Waste dye and other waste products are added and this causes discolouration and, it may be, adds to the smell. Formerly a quantity of partly filtered sewage discharged into the Forth River and this reached the dam. This source of pollution no longer exists since a sewer has now been laid leading towards Springfield Road, hence the filter works are no longer in use.

With a view to getting rid of the bad odours certain steps have been taken. Carcasses of animals deposited at parts of the stream accessible to the public are removed forthwith. During the warmer weather Clonard dam is chlorinated daily. It has now been advised that means should be taken to prevent the water being broken up at the wheelpit—over the weir. From the top sill of the weir an inclined wooden channel has been fixed leading to the low end of the channel leading from the wheelpit. This will prevent the perpendicular fall of the water and the formation of spray. By this means, together with chlorination and the removal of carcasses of dogs at the weir grating, it is hoped that the cause of the trouble will be removed.

Connswater River. This river causes trouble in warm weather through the emanation of offensive effluvia which are given off from the banks as and when the tide recedes and leaves the same dry. The banks, in part at least, look black and they support a medley of organic and vegetable debris plus, betimes, tin cans and oddments *hoc generis*. In the past debris has been thrown into the bed of the river by the tenants of caravans. Four water closets discharge into the river from Bloomfield factory because there is not a sufficient fall for the same to the main sewer.

Conferences and enquiries have been held and have taken place. In June, 1927, consideration was given to the nature and volume of the discharges from the adjacent distilleries and factories. A question was raised—and answered—as to storm water overflows and as to whether the effluent conformed to the requirements of the Rivers Pollution Commissioners—not more than 3 parts of solids per 100,000. In 1928 an enquiry elicited definite information as to sources of pollution. On the right bank there were seven sources and six sources on the left bank. A map was drawn up showing several sources of probable pollution. Incidentally only some five of these sources were definitely accepted as causes of pollution—in addition to the deposits of tenants and gipsies. Two of the five sources were storm overflows, but these were reconstructed to conform to the requirements of the Sewage Commission. Enquiries and reports continued—it was said that the banks of the river near the pumping station should be cleansed—old tins, etc., to be removed from the river. In March, 1929, the City Surveyor and Medical Superintendent Officer of Health visited and examined the district from every possible angle. Some spoke of a weir lower down in order that the mud banks might be kept covered, but this idea was abandoned as it was felt that this would interfere with the free discharge of storm water from the sewerage system and might flood adjacent property. In thinking over the time and thought that have been given to

Connswater river, one remembers that Belfast Lough receives the sewage of Holywood, Bangor, Carrickfergus and Whitehead. The degree of dilution is so great that it is hardly likely this affects Connswater river. It is felt that the likelihood of this river giving rise to offence has been very greatly reduced by the cleansing of the bed of the river and the prevention of the depositing of debris in it.

River Lagan. This river rises in Slieve Croob in Down, at an altitude of 1,755 feet; it is 40 miles long and flows in an irregular north-westerly direction through Dromara, Dromore, Donaghcloney, to within about one mile of Waringstown, thence northwards to the south-east of Magheralin, thence north eastward through Lisburn to Belfast.

It receives a considerable volume of water from the district of Lurgan and the south and south-eastern extremities of the Divis Mountains.

It is used for inland navigation by the Lagan Navigation Company, and in this respect communicates with many other towns, as well as being supplemented by the waters therefrom.

It forms the city boundary at Shaw's Bridge, the southern-most point of Belfast, and enters the city at the north-west corner of Belvoir Park, and flows in a north-easterly direction and discharges into the Belfast Lough. The highest point to which the tide rises is at the Belfast Boat House, near the first locks.

It takes the surface water in the form of smaller rivers and streams from the surrounding lands through which it flows; it is, as it were, the main artery for the draining of a very extensive part of the country.

The water is used by mills and factories before it reaches Belfast. Owing to the present development of land in the way of housing and the conversion of the privy system to the water carriage system there is a fear that pollution of the river is becoming greater. There can be no doubt of this in districts where there are no means provided for the purification of sewage. It is no excuse to say that each house has a septic tank, because the overflow finds its way into a stream and ultimately into the Lagan; even in the case where sewage works are provided the effluent is not always as clean as it should be. It is not only necessary that a system of sewage purification works be provided but care should be taken afterwards to ensure that they are functioning properly.

The river is also used as a means for the disposal of cats, dogs, and other refuse.

As it flows through the city it receives several rivers and streams as well as storm overflows from the sewers; two of the larger rivers are the Blackstaff which enters the Lagan at the Gas Works, and High Street river which discharges at Queen's Square; both drain extensive portions of the higher lands to the west of Belfast.

DRAINAGE AND SEWERAGE.

Particulars of any important extension of sewerage, and of progress made in improving the character and sufficiency of the arrangements for drainage, sewerage, and sewage disposal in all parts of the area.

I have to acknowledge, with many thanks, the following notes from Mr. Donald, the City Surveyor, on this important subject:—

During the past 12 months considerable improvements and extensions to our sewerage system were carried out in various parts of the city.

The first and most important improvement was the disconnection of the Ballygomartin drainage from the Old Purification Works at Forth River and its connection to the town system at Springfield Road by means of a valley sewer laid along the Forth River.

The next in importance was the construction of 760 yards of 15", 12" and 9" pipe sewer along Falls Road and Andersonstown Road to take the drainage of a number of houses on the latter road which had no proper drainage system the houses being, in fact, drained to the nearest stream with the consequent pollution of the water of the surrounding grazing lands.

In Springfield Road, where the development of the district and the substitution of a concrete surface for the existing old water bound macadam road made it necessary to proceed with the construction of 640 yards of 12" and 15" pipe sewers.

In addition to the above mentioned works a vast amount of reconstruction and improvements on sewers were carried out in streets and roads where the surface was to be relaid with modern permanent road surfacing.

Queen's Bridge Pumping Station and No. 5 Culvert.

The above Pumping Station and Culvert which form part of the Flood Prevention Scheme were commenced in the year 1928, and are now practically completed. The wiring of the motor is now all that is required to finish the Station and leave it ready to be put in commission. This Station, when in operation, will, I hope, relieve the flooded areas of the East End of the city and of Oxford Street, May Street, etc.

Closet Accommodation.—In the year 1897 there were in Belfast 26,620 houses with privy accommodation. In 1899 Parliamentary powers were obtained to substitute water closets for privies. At present the number of houses with privy or accommodation other than water closets is 284. These are situated principally in outlying districts where the distance of the houses from the nearest public sewer is more than the statutory distance (100 feet, Public Health Act, 1878, Sec. 25), which makes it compulsory where drainage is ineffectual for the drains of premises to be connected to the sewer. Water closet accommodation is insisted upon in the erection of all new houses.

**Return of Houses with Sanitary Conveniences other than Water Closets.
North Division.**

Situation.	Nature of Convenience.				
	Privy.	Pail Closet.	Earth Closet.	Chemical Closet.	Observations.
Dunlambert Cottages, Fortwilliam Park.....	2	—	—	—	
Cottage in grounds of Lowood, Shore Road	1	—	—	—	
Gate Lodge, Lowood, Shore Road	1	—	—	—	
Cavehill View, Antrim Road	1	—	—	—	
Mount Vernon Cottages, Shore Road	2	—	—	—	
The Farmyard, Oldpark Road	—	7	—	—	
Parkmount Cottage, Parkmount Grounds	—	—	—	1	
Totals	7	7	—	1	

West Division.

Situation.	Privy.	Nature of Convenience.				Observations.
		Pail Closet.	Earth Closet.	Chemical Closet.		
1 and 2 Springfield Cottages .....	..... —	2	—	—	
1 Willowbank House .....	..... —	1	—	—	
1, 2, 3, 4 Servants' Quarters, Willowbank.....	..... —	4	—	—	
1 to 12 Milltown Row .....	..... —	12	—	—	
"Eno Cottage," Milltown Row .....	..... —	1	—	—	
1 to 4 Milltown Cottages .....	..... 4	—	—	—	
1 and 2 Somerville Cottages, Falls Road.....	..... —	2	—	—	
Lake Glen Lodge, Falls Road .....	..... —	1	—	—	
Lake Glen Cottages, Falls Road .....	..... 2	—	—	—	
"Meadow View," Falls Road .....	..... 1	—	—	—	
464 Falls Road .....	..... 1	—	—	—	
1 and 2 "Maryburn," Falls Road .....	..... 2	—	—	—	
1 and 2 "Glenalina," Whiterock Road .....	..... 2	—	—	—	
Glenalina Lodge, Whiterock Road .....	..... —	1	—	—	
"Wren's Nest," 93 Whiterock Road .....	..... —	1	—	—	
Ballymurphy Cottage, Whiterock Road .....	..... 1	—	—	—	
1 & 2 Whiterock Cottages, Whiterock Road .....	..... 2	—	—	—	
Whiterock Lodge, Springfield Road .....	..... —	1	—	—	
Turf Lodge, Ballymurphy .....	..... 1	—	—	—	
M'Mullan's Cottage, Oldpark Road .....	..... 1	—	—	—	
Montgomery's Cottage, Oldpark Road .....	..... 1	—	—	—	
Silverstream Cottage, Ballysillan Road .....	..... 1	—	—	—	
"Harmony," Glenbank .....	..... 11	—	—	—	
Cottages at Glen, Wolfhill .....	..... 2	—	—	—	
Glenwood House, Shankill Road .....	..... 1	—	—	—	
New Barnsley, Springfield Road .....	..... —	6	—	—	
Brown's House, Springfield Road .....	..... 1	—	—	—	
Rocklyn Cottage, Springfield Road .....	..... 1	—	—	—	
1/81 Springfield Village .....	..... —	41	—	—	
2/36 Springfield Village .....	..... —	18	—	—	
Forth River Cottages .....	..... —	6	—	—	
Totals	35	97	—	—		

South Division.

Situation.	Nature of Convenience.				
	Privy.	Pail Closet.	Earth Closet.	Chemical Closet.	Observations.
Meadow Cottage, Stockman's Lane	1	—	—	—	
St. John's "School," Malone Road	2	—	—	—	
Beechmount Farm, Malone Road	1	—	—	—	
Martinville (2 cottages), Malone Road	2	—	—	—	
Cottage, 59 Upper Malone Road	1	—	—	—	
Ivy Cottage, Malone Road	—	1	—	—	
Eden Farm do.	—	1	—	—	
Toll Office, 1st Locks	1	—	—	—	
Navigation Cottage, 1st Locks	—	2	—	—	
Cottage, 3rd Locks	1	—	—	—	
Gibson's, New Forge	1	—	—	—	
Riverview Cottage, New Forge	1	—	—	—	
Cottage, New Forge	1	—	—	—	
Hollyrood Lodge, Malone Road	1	—	—	—	
Coolavin, Malone Road	1	—	—	—	
Mrs. Malloy's Cottage, Bladon Park	1	—	—	—	
Mr. Harper's Cottage, New Forge	—	—	1	—	
3 Cottages, New Forge	—	3	—	—	
C.P.A. Recreation Grounds, Bladon Drive	—	2	—	—	
2 Cottages, New Forge	—	2	—	—	
R.A. Inst. Recreation Grounds, Bladon Drive	—	—	2	—	
Botanic Gardens	—	1	—	—	
3 Cottages, Young's Estate, Balmoral Avenue	3	—	—	—	
Bladon Park, Gate Lodge, Malone Road	1	—	—	—	
Totals	19	12	3	—	

East Division.

Situation.	Nature of Convenience.				
	Privy.	Pail Closet.	Earth Closet.	Chemical Closet.	Observations.
Annadale Cottage, Up. N'townards Rd.	—	1	—	—	
Greenville Cottage, Bloomfield Road	—	1	—	—	
Orangefield Estate, Bloomfield Road	18	—	—	—	
Cabin Hill Cottages, Up. Newtownards Road	2	—	—	—	
Kenbaan Cottages, Knock Road	3	—	—	—	
Richmond Cottages, Sandy Loaning	—	4	—	—	
Richmond Lodge, Holywood Road	—	1	—	—	
Glen-Ebor Cottages, Quarry Road	—	4	—	—	
Glen-Ebor Lodge, Glenmachan Road	—	1	—	—	
Glenmachan Cottages, Old Holywood Road	11	—	—	—	
Netherleigh Cottages, Belmont Road	—	2	—	—	
Netherleigh Cottages, Massey Avenue	—	2	—	—	
Tweskard Cottages, Massey Avenue	—	6	—	—	
Tweskard Lodge, Belmont Road	—	1	—	—	
Moat Cottages, Old Holywood Road	2	—	—	—	
Moat Lodge, Old Holywood Road	1	—	—	—	
242/286, 290 Castlereagh Road	—	24	—	—	
Ballyrush Cottages, Castlereagh Road	2	—	—	—	
Glen Cottage, Castlereagh Road	—	1	—	—	
Front Gate Lodge, Orangefield	1	—	—	—	
1/2 Prospect Cottage, Ballynafeigh	1	1	—	—	
Prospect House, Ballynafeigh	1	—	—	—	
Marquis Cottage, Ballynafeigh	—	1	—	—	
Rosetta Cottage, Rosetta Avenue	1	—	—	—	
1/2 Flush Cottages, Knockbreda Road	2	—	—	—	
1/2 Polo Cottages, Castlereagh Road	2	—	—	—	
Retreat Cottage, Ravenhill Road	1	—	—	—	
Gardener's House, Ormeau Park	—	1	—	—	
398 Ravenhill Road	1	—	—	—	
Victoria Park	1	2	—	—	
Totals	50	53	—	—	

SUMMARY.

Return of Houses with Sanitary Conveniences other than Water Closets.

		Nature of Convenience.			
		Privy.	Pail Closet.	Earth Closet.	Chemical Closet.
North	7	7	—	1	
South	19	12	3	—	
East	50	53	—	—	
West	35	97	—	—	
Totals	111	169	3	1	

SMOKE ABATEMENT.

Arrangements have now been made for the taking of 104 smoke observations in each of the four divisions each year.

The following are the reports of the Divisional Officers for 1929:—

North Division.

During the year complaints were received of alleged nuisances caused by the discharge of black smoke from three factory chimneys. In one case it was found that the nuisance was caused by the smoke being discharged below the level of the adjoining houses; the chimney was raised and the nuisance abated. In the second case a new boiler had been installed but was not giving satisfaction. Certain tests and alterations were made and the nuisance abated. In the third case observations taken did not justify a prosecution.

South Division.

There are approximately 60 business places in this division which have boilers and chimney stacks; they consist of mills (weaving, spinning), tobacco factory, confectionery, bakeries, boxmaking factory, vulcanite felt works, tanners, builders, finishing works, dye works, distillers, gas works, electricity works, destructor, etc.

During the year one complaint was made of the discharge of black smoke from the chimney of a boxmaking firm. The manager was consulted, the fireman cautioned, and four smoke observations taken, none of which showed black smoke being emitted from the chimney; there were no further complaints.

East Division.

Notices were served on three firms for the discharge of black smoke from their chimneys. The nuisances were duly abated, the fireman giving better attention to stoking.

West Division.

There are 36 chimneys in the West Division, used by firms in the linen business and in foundries. Eight of these chimneys are not in use at present.

PREMISES AND OCCUPATIONS WHICH CAN BE CONTROLLED BY
BYELAWS AND REGULATIONS ADMINISTERED BY PUBLIC
HEALTH DEPARTMENT.

Nature of Byelaw.	Number of Premises.	Character of Premises.
Abattoir— Butcher's working in	1 —	City Abattoir. —
Abattoir— Management and Charges	—	—
Burial Grounds	<div> <div>12</div> <div> <div>{</div> <div>3 controlled by Corporation.</div> <div>9 Private Burial Grounds.</div> </div> </div>	<p>The Burial Grounds under the control of the Corporation are City Cemetery, Dundonald Cemetery and Knock Cemetery.</p> <p>The City Cemetery is situated about 2½ miles from the centre of the City on the West side of Falls Road. It contains about 45 acres and was opened in the year 1869.</p> <p>Dundonald Cemetery is situated in the parish of Dundonald, about 4 miles distant from the centre of the city. It also contains about 45 acres and was opened in the year 1905.</p> <p>Knock Cemetery is situated on the Knock Road.</p> <p>The private burial grounds are:— Friars' Bush Cemetery, Stranmillis Rd. Milltown R.C. Cemetery, Falls Road. Malone Burial Ground, Stockman's Lane. Quakers' Burial Ground, Balmoral Ave. Old Charitable Institution Burial Ground, Clifton Street. Greencastle Burial Ground, Greencastle. Ballymacarrett Methodist Church Burial Ground, Newtownards Road. St. Matthew's Church Burial Ground, Shankill Road.</p> <p>All the graveyards are regularly inspected by the officers of the Public Health Department in order to ensure that the requirements of the Public Health Act and Byelaws made thereunder are complied with.</p>
Dairies, Cowsheds & Milkshops (Ireland) Order.	89 Cowsheds. 1,517 Milkshops.	Reports attached.

Premises and Occupations which can be Controlled by Byelaws and Regulations administered by Public Health Department—*Continued.*

Nature of Byelaw.	Number of Premises.	Character of Premises.
Ice Cream— Manufacture and Sale of	1,112	Grocery Shops; Confectionery Shops; Fish and Chip Shops; Kitchen Houses, &c., &c.
Lodging Houses— Common	53	The Common Lodging Houses are old type of houses, situated principally in the centre of the City, with accommodation for lodgers varying from 5 to 319. They consist of:— One—1-storey house; Eleven—2 stories; One—2 stories and attics; Eighteen—3 stories; Fifteen—3 stories and attics; Five—4 stories; One—basement and 2 stories; One—basement and 3 stories.
Other than Common	736	Detailed report attached.
Seamen's	None registered.	—
Meat— Conveyance of	—	—
Inspection of	—	—
Offensive Trades	21	Hide Stores 2; Gut Scrapers 2; Bone Boilers 5; Soap Manufacturers 6; Fellmongers 3; Fat Boilers 1; Fat Extractors 1; Tanners 1.
Piggeries	—	—
Sheep Scab	—	—
Tents, Vans, &c.	—	—
Rag Flock Act, 1911, Regulations	No rag flock manufactured in Belfast, but flock is sold in approximately 20 premises.	Bedding manufacturers and Upholsterers. During the year 10 samples of flock were taken and submitted to Public Analyst and found on examination to be up to standard.

SCAVENGING.

Particulars of any extension or improvement during the year of methods of scavenging or refuse disposal, and a statement as to the character and efficiency of the arrangements for the removal and disposal of house refuse and the cleansing of earth closets, privies, ashpits, and cesspools in the area.

Mr. Donald, City Surveyor, has kindly furnished me with the following particulars:—

During the year the Corporation has purchased two Lacre Sweepers and one Karrier Sweeper and Collector. The fleet of street sweeping machines now comprises nine Lacre Sweepers for night street sweeping, one Sweeper and Collector for day street cleansing and watering and four Vulcan Lorries for collection and disposal of street sweepings. They have also introduced a system whereby tanks can be fitted to S.D. freighter vehicles for the watering of streets prior to sweeping and this has proved very beneficial.

The streets in the centre of the city are swept daily; those in the outer districts from three to six times weekly, depending upon locality.

In the Refuse Collection and Disposal Section six vehicles have been purchased and a contract provisionally arranged, subject to the approval of the Ministry of Home Affairs, for the purchase of a further two tractors, six trailers and four Vulcan Eagle Refuse Collection vehicles. These, with the six freighters, will give a refuse collection and scavenging fleet of twenty-six mechanically propelled vehicles of various types.

By this means it has been possible not only to effect a considerable reduction in the cost of collection, but also to increase the frequency of collection. It is hoped in the near future to have all the bins emptied and cleansed weekly as soon as the necessary plant, etc., can be obtained.

During the past year 18,417 tons of refuse from the area adjoining the Destructor have been incinerated and 96,471 tons have been deposited on tipping grounds on the outskirts of the city. Steps are being taken to prevent tips being unsightly during tipping operations, and it is hoped in the near future to effect still greater improvements in this respect.

During the year the number of ashbin cleansings was approximately 2,724,061, and the number of ashpits 63,689. This is a reduction in the number of cleansings of ashpits due to the substitution of bins. The number of privies cleansed during the year was 217, which includes workmen's temporary privies, and the number of cleansings of pails was 11,383.

It is hoped that when additional powers have been sanctioned by the Belfast, 1929, Bill, a still further reduction in the number of ashpits will be obtained.

Steps are also being taken to extend the main sewerage system in order to eliminate the use of cesspools.

Generally speaking I consider that the system of scavenging, embracing street cleansing and collection and disposal of refuse, is progressing on very up-to-date and satisfactory lines.

From Mr. Donald's excellent resumé it will be seen that from the health point of view the Medical Officer's ideal is fast approaching accomplishment, that is to say, a weekly emptying of bins. Doctors know that many factors are responsible for deaths from infantile diarrhoea. Perhaps maternal ignorance comes first; if mothers are foolish and feed their babies too often instead

of say, every three hours during the day, then the babies' stomachs go on strike. Gastritis and then enteritis follow and then, sometimes, death. Beyond this there is a question of civic cleanliness. Where bins are emptied weekly and streets are cleansed with meticulous care; where scavenging is thorough, as in Belfast, then no one can say that infantile diarrhoea is due to infection of milk from dust particles. Housewives must clean their own demesne and ignorant mothers must be taught mothercraft. It is recognised that the frequent emptying of dustbins plays its part in promoting the health of the community. For this reason I welcome the splendid advance recorded in the City Surveyor's report on this subject.

Sanitary Inspection.—Tabular statement showing number and nature of inspections made during the year, the defects or nuisances discovered or complained of, and the sanitary improvements carried out in remedying the defects and abating the nuisances. During the year 15,230 statutory notices for abatement of nuisances were served. No record is kept of verbal notices.

OTHER SANITARY CONDITIONS REQUIRING NOTICE.

1. THE MILK SUPPLY.

On January 1st, 1929, there were 1,517 names on the register. During the year 209 new names were added, and as 236 ceased selling, 1,490 names were on the roll on December 31st, 1929. Four premises were refused registration, the premises being unsuitable. 1,380 sell milk in shops, while 110 sell from carts and motors. The shops are grocers' and confectioners' to most of which dwelling houses are attached. In nearly all cases the milk is sold "loose"; in the shops the milk is kept in a vessel with a cover over and is separate and apart from any likely source of contamination.

The daily milk supply to the city is approximately 20,540 gallons. Some 430 gallons of this is Grade A (T.T.) milk, sold by five purveyors. Four of these purveyors reside outside the city and one resides inside the city; it is earnestly to be hoped that the sale of Grade A (T.T.) milk will expand extensively.

Of the total milk sold, 6,000 gallons, pasteurised, is sold in bottles by one firm. Pasteurised milk is distinctly better than ordinary loose milk, but unheated, tubercle free milk is the desired goal.

More than four-fifths of the total daily supply of milk to the city is produced in farms outside the city, and over these dairy farms the officers of the city have no supervisory powers. Of the milk supply which is brought into the city by rail, approximately 80 per cent. is taken away from the stations in the consignors' cans to the premises of the milk purveyors; the remaining 20 per cent. is changed at the stations from the consignors' cans into those of the local retailers. This process is accomplished by the local retailer who pours the milk from the consignor's can (12 gallons) into a small 2-gallon can. From this latter the milk is then poured into the milk cans on the vehicle. While this process is going on the milk is liable to be contaminated by dust, soot, etc. It is desirable that this pernicious practice should be stopped. Furthermore, inasmuch as the outside producer sends his milk to the city by motor (as well as by rail) about 2,000 gallons change hands either at the city boundaries or in the streets—in the same fashion as at the stations—again a most unhygienic practice. Sometimes the outside milk producer delivers the milk at the city purveyor's premises. Some wholesale dealers live outside and some live inside the city; such obtain their supplies from outside producers and they deliver supplies to city retailers inside the city. To do away with the indefensible

practice of milk changing either at the stations or in the streets, we require a central depot where all milk consigned to street retailers could be changed. Still further, milk is exposed to contamination by street retailers who distribute milk in small uncovered cans and milk measures. To prevent the possibility of receiving contaminated milk, I advise all citizens to buy milk for their households, delivered in sealed bottles. Having made these critical observations it is necessary to point out the high standard of milk cleanliness aimed at and insisted upon by the Public Health Department. It has been the custom in the past—and an excellent custom too—to take samples of milk—not only for the usual chemical tests—but for a bacterial count. This bacterial count is a measure of the cleanliness (or dirtiness) of the milk. **It must be recorded that again and again and again** the milks so tested are of a very high degree of purity. Where milk is found to contain over 200,000 germs per cubic centimetre and colon bacilli in 1/100th of a cubic centimetre, the retailer is written to and is asked to call at the City Hall and explain why the milk is not clean. It is patent to us that as the retailer gets his milk from producers **outside** the city, **over whom we have no control**, that matters might have tended to remain as they were unless the local retailer had undertaken, as he now does, to strain his milk under the supervision and persuasion of the City Health Department. It is fair to say that at a recent Public Health Congress, when your city Medical Superintendent Officer of Health explained the standard of cleanliness now required in Belfast, there was some criticism to the effect that, at least in the Summer time, our standard was too high. Meanwhile during 1929 two further standards of milk cleanliness were adopted. Milk samples are now sent to the Public Analyst for examination and report on parts of dirt per 100,000. True, there is no legal standard—the question is sub judice—but here again if the parts of dirt per 100,000 are over 3 we write to the retailer on the subject. Finally, an instrument has been bought which enables the officer using it to separate out dirt on a disc of blotting paper. It is intended that the retailer will be shown his disc where such is found to be dirty—as a visible token of the state of affairs.

To sum up, progress is being made, the milk supply is good and it is relatively clean; it is not perfect and matters will be difficult until the standard of cleanliness requirements outside the city is raised to that demanded inside the city. There is no need to dwell on the chemical tests. Where fat is reported to have been abstracted, or where water is reported to have been added, then according to the percentage of defect the matter is dealt with, either by caution or by summons.

During 1929 not one single case of infectious disease could be traced to a milk shop. No milk is allowed to be kept for sale in a sleeping room or in any room or place opening directly into a sleeping room, or in any place where there is a water closet, or where there is a direct opening into a drain, or where coal, paraffin oil, or old clothes are sold. The milk vessels are all scalded with steam or boiling water. Floors, walls, etc., of stores and shops are generally clean and the places are lighted and ventilated. Where any slight defect or trifling cases of neglect are found the attention of the persons in charge is called to the same and the matter is remedied without delay. Where any serious breach of the regulations is found the person responsible is prosecuted.

Milk from Cattle Sale Yards.

For some time during 1929 the Department was annoyed by a practice prevailing in some sale yards. During the absence of the inspector, small boys would steal into and among cattle and would milk overstocked cattle, the milk being received into disreputable tins or containers; it was said that this milk was being sold in one or two streets in the city where the inhabitants were not too particular as to who sold it or how it was conveyed. Strenuous action

was taken and at the moment it may be said that the practice has virtually ceased; small quantities here and there are obtained by juveniles for family use when the inspector's back is turned. Nearly all cows are taken from the sale yards to private yards and are there milked. At these places it is stated that the milk from overstocked cows is used for pig feeding, and other milk is used for butter making for private use (the buttermilk is used for animal feeding). Care is taken that none of this milk is sold for the public's use. Nothing is done with reference to milk from cows at Maysfields, Great Northern Railway, East Bridge Street; here the only solution would be for the Corporation to employ persons to milk the cows.

Legislation.

It is desirable that an Act should be passed with reference to the milk supply.

The question of dealing with the problem of how to prevent tuberculosis being contracted by the consumption of sweetmilk has been discussed by the Public Health Committee on more than one occasion. We feel that we have never had adequate legal authority for dealing with the milk supplies found to be infected with tubercle bacilli. It is true that the Bovine Tuberculosis (Northern Ireland) Order, 1926, is sufficient for dealing with individual cows affected with tuberculosis, but this Order does not lend itself to the satisfactory dealing with the infected sweetmilk supply, neither does it give authority for the stopping of infected milk coming into the city from outside sources.

The Milk and Dairies Consolidation Act, 1915, which was passed by the Imperial Parliament, came into force on 1st September, 1925. This Act does not apply to Northern Ireland, and when the Milk and Dairies Order, 1926, made under the Milk and Dairies Consolidation Act, 1915, by the Ministry of Health, England, came into force in October, 1926, a deputation appointed by the Public Health Committee waited upon the Ministry of Agriculture with regard to the introduction of legislation on similar lines to those existing in England and Wales, and the Ministry promised to do everything possible to improve the supply. The Government of Northern Ireland have not yet introduced a similar Act to the Milk and Dairies Consolidation Act, but have introduced a Sale of Milk Act, 1927, making regulations for the granting of licences for the sale of designated milk (Grade A., T.T.). This Act, whilst encouraging the production of clean milk only applies to good dairykeepers whose milk in most cases is already in a satisfactory condition of cleanliness. This Act, however, makes no provision against the dirty handling of milk and leaves many defects in our existing legislation relating to milk supplies in the city.

The advantage of having similar legislation to the Milk and Dairies Consolidation Act, 1915, is evident as many of the deficiencies of our existing Acts are provided for. Thus the English Act gives power to stop supplies of milk likely to cause tuberculosis. It makes provisions as to selling milk in public places, gives ample powers to take samples, and amends the Sale of Food and Drugs Acts enabling Inspectors to take samples in the process of delivery and at any time before delivery to the consumer (not at the place of delivery or at the time of delivery), as at present, which procedure has very obvious drawbacks.

In addition, this Act enables Byc-laws to be made which may cover every phase of the production and handling of milk besides the inspection of dairy herds, etc.

Whilst the proposed adoption of the Milk and Dairies Consolidation Act and Order will cover many of the inadequacies of our existing legislation regarding milk supplies, the Public Health Committee would welcome a more comprehensive scheme for the eradication of tubercular infection amongst dairy cattle. Such a scheme should be made applicable to the whole of Northern

Ireland, and should be carried out by one central authority whilst adequate steps could be taken to prevent the importation of affected animals into this area. In this connection it might be suggested that the Ministry of Agriculture of Northern Ireland would introduce free veterinary assistance and free tuberculin testing to enable owners to free their herds from tuberculosis.

To be of any use, animals must be notified early and not, as at present, in the late stages of the disease when they have been infective for long periods, and have done most, if not all, the harm they are likely to do and when their notification only interrupts their career some short time before they would reach their natural destination—the knacker's yard.

As regards the frequency of tubercular infection of the milk supplies in Belfast—during the 3 years 1925-1927, 875 samples were examined for the presence of tuberculosis and 36 of these proved to have been infected with tubercle bacilli, that is 4.1 per cent. of milk as sold in Belfast is infected with tubercle bacilli.

In some of the larger cities of England and Scotland as much as 10 per cent. of the milk supply is infected with tubercle. I am informed that 30 per cent. of dairy cattle in Northern Ireland react to the tuberculin test and the practical solution of the problem of how to deal with these reactors is beset with great difficulty—whilst it is admitted that it would not be feasible to have all reactors slaughtered it should be better to determine by laboratory tests which of the reactors were “open” or infective animals, and especially the dangerous udder cases, all of which should be slaughtered. Under existing conditions it would be better that all reacting cows' milk should be treated by sterilization or pasteurisation, and the use of such reactors for dairy purposes should be discouraged by prohibiting the sale of the milk unless treated by heating. The milk which comes from tubercle-free herds should remain in its raw state. That any process such as pasteurisation or sterilisation must be used is an admission that something has to be remedied. It is a mistake to treat clean milk by any heating process—it doesn't require it, and it is apparently dishonest to treat dirty milk—to make it saleable. It may be possible to destroy the bacteria in dirty milk by heating, but it is impossible to get rid of the no less harmful bacterial products (toxins) in this way. Pasteurised milk has often been described as a bacterial cemetery, and at the best it is only a palliative way of dealing with dirty milk. Pasteurisation may eliminate the danger of tubercular milk, but it is not a remedy for bovine tuberculosis.

It does not seem unreasonable to ask that adequate supervision and inspection by a Government department or central authority should be carried out in the whole of Northern Ireland. By adopting the legislation in force in England a more satisfactory method of dealing with milk supplies will be found.

2. THE MOSQUITO NUISANCE.

Throughout the British Isles mosquitoes are tending to increase in numbers; in the year 1928, the attention of the Public Health Committee was drawn to the prevalence of mosquitoes, and the action taken thereupon acted as a check, but it has been realised that without the help of householders the nuisance will continue. In order that those parts of the City which are principally affected may be known—with a view to action and advice—it is desirable that the citizens will send information to the Public Health Department, City Hall. Thanks to modern sanitation, the drainage of marshes, the drying of the soil, etc., malaria, as an indigenous disease, has practically ceased to exist; in the year 1665, in the London area alone, 5,257 deaths were due to fever and ague, and a great deal of research work has been undertaken since with excellent results.

In modern times mosquitoes have been numerous in Summer months, and through their bites and the acrid septic fluid which they inject, sometimes give rise to inflammation and intense irritation. Twenty-one deaths in seven years have taken place from this cause. In this way between 1919 and 1925, it has spread practically throughout the United Kingdom; it is thus seen that there are unpleasant possibilities, or other unforeseen complications. The problem is difficult as there are upwards of twenty-six different species of mosquitoes, some of which produce broods at different seasons of the year; furthermore, numerous householders either do not appreciate the menace to health, or on the other hand, fail to take steps which they alone can to safeguard themselves or their friends.

In the Summer time mosquitoes, as a rule, are more numerous and troublesome, but there are certain species still active in February. In the late Autumn the males die off, but the females survive and pass the Winter, as fertilized adults, in cellars, attics, outhouses, stables, cowsheds, holes in trees, etc.; any intelligent observer can see them, motionless and apparently lifeless, pressed close to doors, ceilings, walls and railings. Destroy these, as described hereafter, in their Winter quarters, and huge reductions in their numbers will follow. There are four stages in the life history, the egg, the larva, the pupa, and the adult. In the warm weather eggs are laid on water, some in dry places; these eggs hatch in three days' time when the larva emerges. The latter is found with the head downwards, below the surface of the water, breathing through a siphon tube which projects above the surface, advantage being taken of this siphon tube by the application of paraffin to choke and destroy the larva. In the pupa stage, which is in appearance like a large comma, the developing mosquito can be seen wriggling beneath the surface of the water, and in a few days it rides upon the surface, emerging in an adult form and taking wing. In the development of the anopheles the first batch of eggs are laid in April at the margins of pools, ditches, streams, in stagnant water, in gutters, in water in broken crockery or discarded tins, and in water butts, etc., etc. In order to obviate all this, now is the time to destroy the hibernating female, in rooms, attics, cellars and outhouses. By "swatting" as many do, the wallpaper is disfigured. A portable vacuum cleaning machine is useful, the same can be used by placing the cupshaped nozzle over the resting insects; be sure and burn the contents of the bag or box, and don't put them into the dustbin, or other receptacle. Fumigation is valuable, especially for stables or outhouses. By blocking up all apertures first then burning one pound of sulphur to every 1,000 cubic feet of space, care being taken to put the sulphur in a pail or inside a dustbin lid for fear of causing a fire—a trace of methylated spirits will help to get the sulphur alight. Many spray attics, lumber rooms, tents, summer houses, with a 2½ per cent. solution of soft soap, combined with 5 per cent. of a good brand of disinfectant. For sheds and outhouses a well mixed solution of 25 per cent carbolic and 75 per cent. paraffin oil is valuable. Again, thorough limewashing of walls may be as good as any. Next we come to the treatment of stagnant water. Pools and puddles should be drained and filled up and any choked up gutters, sinks, and lavatories connected with the house, should be attended to. For small areas a "one-handed" pneumatic sprayer such as is used by fruit growers, could be used for spraying casual water with paraffin oil containing 3 per cent. of castor oil. Some simply empty the oil from a bowl, taking a tablespoonful per square yard or one pint for 40 square yards of water surface. White Cross disinfectant can be poured from a watering can with a rose nozzle, the strength being one part of the disinfectant to sixteen thousand parts of water. Solution of copper sulphate, one part to five thousand parts of water, is efficacious. In the case of holes in trees where larvae will be found, spray with the following:—Water, 60 per cent; soft soap, 15 per cent.; eucalyptus oil, 15 per cent.; soda bicarbonate, 10 per cent.—after boiling and setting aside to cool. The tree holes should then be filled with pitch. Put paraffin on to water in water butts every week and get rid of broken crockery and old tins which collect rain and "grow" larvae.

In the larger areas, such as ponds, streams, etc., these will be dealt with by the Municipality; let the householder look after his own domain for larvae and the adult forms. A brass copper or bronze mesh, not more than 18 to the inch, could usefully be placed over every tank or cistern used for holding water to protect same.

Can anything be done to prevent these bites? The following may be tried:—Oil of lavender on hair or clothes. Burn lavender or creosote oil on soft wood such as cedar wood (your empty cigar boxes). Whilst some put their faith in burning camphor. The mosquito frequently bites about people's ankles; the wearing of two pairs of thin socks or stockings is better than one thick pair, and the wearing of Russian or Wellington boots in the garden should be observed. To protect the face and ankles, use a fifty per cent. alcoholic solution of thymol or oil of cloves in lanoline. Another recipe is:—citronella oil, 1 oz.; spirit of camphor, 1 oz.; cedar wood oil, $\frac{1}{4}$ oz. If bitten, dab on at once a weak solution of ammonia or of washing soda or common soap and vinegar, or cut a raw onion in two and apply the cut surface to the sore. If the irritation is severe, apply iodine in glycerine. Call in your doctor at once if matters get worse.

In conclusion, we require to have a mosquito chart or a map of the districts, if we are to learn of the breeding places, the public can help by reporting to the M.S.O.H. at the City Hall, where such may be found. We already have much information, but the public can and ought to help us in their own interest and that of the City.

3. THE PUBLIC BATHS.

At the request of the Chairman of the Committee I prepared a report dealing with the hygiene of the public baths. This report dealt with the modern scientific control of swimming pond water purification. Clarification by filtration and by the use of hydrate of alumino was described, then the use of chlorine to ensure sterilisation was explained.

The desirable standard of cleanliness for swimming baths water was given as (a) Not more than ten per cent. of samples, covering any three months' period, shall contain more than 500 bacterial colonies per cubic centimetre when incubated for 24 hours at 37 degrees centigrade on an agar or litmus lactose agar medium. As regards the bacillus coli group: Not more than two out of five one cubic centimetre samples collected on the same day, or not more than three out of any ten consecutive one cubic centimetre samples of the water collected at times when the pool is in use shall show a positive partially confirmed test for bacteria of the B. coli group. (b) Chlorination. An excess of not less than .2 parts per million of available or free chlorine should be maintained by treatment of the water with chlorine or its compounds.

The report gave the dimensions of each of the City baths in addition to capacity in gallons, type of existing filtration system, frequency of cleaning of filters, amount of chloride of lime used, method of using, and the same particulars with reference to aluminoferric; the frequency of renewal of the pond water.

Results of bacterial analysis followed. Recommendations followed advocating the installation of chlorinometers in place of the daily use of chloride of lime which was a temporary expedient.

Following upon this report some 3 lbs. of chloride of lime were used each evening in each of the baths. Various tests were used—e.g., Starch Iodine solution for the faint blue colour which proves the presence of free chlorine. In testing for acidity phenolphthalein solution proved the correct reaction of the water, a faint pink colour being the result of the test.

For some time chloride of lime was used and the Ministry's dictum was kept in view, namely, "The free chlorine content of the water should be not less than .2 and not more than .5 parts per million of water. The water may contain as much as 1.3 parts of free chlorine per million, without giving rise to complaints of odour or smarting of eyes."

The use of chloride of lime was very helpful but as it is an unstable substance and although it is expected that 1 lb. (containing 33 per cent. of available chlorine) in 33,000 gallons would yield one part of free chlorine per million, the results of sample testing by the Public Analyst and the City Bacteriologist proved that theoretical opinions were not quite the same as practical findings.

The Committee decided to go ahead with the installation of new plant, and I have to thank the City Surveyor for his kindness in giving me the position as affecting said installation. "At Templemore Avenue the enlarged pond is in use, two new electrically driven pumps have been installed, also two closed type aerators, alumino treating tanks and a new filter for the 2nd class pond. The alkali tank and chlorine treating apparatus should be ready in the course of a week or so. The cost of the new plant will amount to approximately £745. At Ormeau Baths two closed aerators, chemical tanks and chlorine gas apparatus will be installed and the existing Turn-Over Filter will be brought up to date. Work has now been commenced and the cost of plant, etc., will be approximately £415. At Falls Baths similar plant will be installed and the existing pumps overhauled at a cost of approximately £450."

FACTORY AND WORKSHOP ACTS.

Summary of inspections and of sanitary improvements carried out under the supervision of the Department, in pursuance of the provisions of above Acts.

FACTORIES.

587 visits were made to factories.

105 nuisances were discovered.

16 complaints were received from H.M. Inspector of Factories.

15 complaints were received from other sources.

54 Statutory notices for sanitary defects were served.

16 Verbal notices for sanitary defects were given.

SANITARY IMPROVEMENTS.

No. of Factories in which improvements were carried out.	Nature of improvements.
2	Water closet accommodation provided.
6	Additional water closet accommodation provided.
1	New water closet apartment provided.
32	Water closets cleansed.
16	Water closets repaired.
2	Offensive and defective water closets abolished and new water closets provided.
3	Doors with suitable fastenings provided to water closets.
1	Separate approach to sanitary conveniences provided.
9	Intervening ventilated spaces provided between workrooms and water closets.
4	New roofs provided to water closets.
2	Tiles relaid or floors repaired.
2	Means of ventilation provided.
1	Ventilating Fan provided.
1	Hood and flue provided to carry off gas fumes.
1	Drains repaired.
1	Waste pipe provided to sink.
3	New drains provided.
2	Drains cleansed.
1	Opening into drain within factory where food is stored, closed up.
1	Roof and spouting repaired.
6	Yards and premises cleansed.
2	New chimney stacks erected.
1	Dining-room cleansed and painted.
1	Water supply provided.
4	Smoke nuisances abated.
1	Ashpit abolished and dustbin provided.
2	Premises closed on sanitary grounds as unfit for use as a factory.
3	Trade refuse removed.

WORKSHOPS.

- 2,393 workshops on register on 1st January.
- 144 registered during the year.
- 64 removed from register during the year.
- 2,581 visits made.
- 375 nuisances discovered.
- 221 Statutory notices for sanitary defects were served.
- 101 verbal notices for sanitary defects were given.
- 21 complaints were received from H.M. Inspector of Factories.
- 7 cases of failure to exhibit abstract of Factory and Workshop Act were reported to H.M. Inspector of Factories.

SANITARY IMPROVEMENTS.

No. of Workshops
in which improvements
were carried out.

Nature of improvements.

10	.....	Water closet accommodation provided.
9	.....	Additional water closet accommodation provided.
17	.....	New water closet apartments erected.
12	.....	Intervening ventilated spaces provided between workrooms and water closets.
4	.....	Obstructions to water closets removed.
62	.....	Water closets cleansed.
87	.....	Water closets repaired.
13	.....	Water closets provided with doors fitted with fastenings.
2	.....	Yards cleansed.
2	.....	Washhand basins provided.
2	.....	Water taps repaired.
3	.....	Means of heating provided.
13	.....	New drains provided.
6	.....	Drains cleansed.
2	.....	Cisterns repaired.
3	.....	New waste pipes provided to sinks.
15	.....	Walls and ceilings of workshops repaired.
127	.....	Workshops cleansed and limewashed.
3	.....	Workshops provided with means of ventilation.
5	.....	New stairs provided.
4	.....	Water supply provided.
2	.....	Stairs provided with handrail.
8	.....	Hoods and flues provided to gas iron heaters.
28	.....	Tiles relaid or floors repaired.
1	.....	Smoke nuisance abated.
25	.....	Trade refuse removed.
1	.....	Manure removed.
8	.....	Receptacles for ashes provided.
21	.....	Roofs and spouting repaired.
3	.....	Premises closed on sanitary grounds as unfit to be used as a workshop.

WORKPLACES.

- 318 visits were made to workplaces.
- 58 nuisances were discovered.
- 25 Statutory notices were served.
- 3 Verbal notices given.
- 13 complaints were received.

SANITARY IMPROVEMENTS.

No. of Workplaces in which improvements were carried out.	Nature of improvements.
2	Additional sanitary accommodation provided.
1	New water closet apartments provided.
2	Water closets cleansed.
5	Water closets repaired.
1	Intervening ventilated space provided between workplace and water closets.
1	New cistern provided.
3	Sanitary conveniences provided with doors and fasteners.
4	Workplaces cleansed and limewashed.
3	Tiles relaid.
2	Roofs and spouting repaired.
1	Opening into drain within workplace closed up.
4	Accumulations of manure removed.
3	Accumulations of trade refuse removed.

BAKEHOUSES.

646 visits were made to bakehouses.

142 nuisances were discovered.

4 cases of failure to exhibit abstract of Factory and Workshop Act were reported to H.M. Inspector of Factories.

SANITARY IMPROVEMENTS.

No. of Bakehouses in which improvements were carried out.	Nature of Improvements.
4	Water closets cleansed.
8	Water closets repaired.
2	Intervening ventilated space provided between bakehouse and water closets.
2	Means of ventilation provided.
2	Openings into drains within bakehouses closed up.
4	Sanitary conveniences provided with doors and fasteners.
9	Hoods and flues provided to carry off fumes from hot plates.
1	Exhaust provided to gas oven.
2	Walls repaired.
9	Roofs, walls and spouting repaired.
3	Ceilings repaired.
2	Floors repaired.
5	Tiles relaid.
2	New doors provided.
1	Food removed from part of building where water closet is situated.
26	Bakehouses cleansed and limewashed.
1	Dustbin provided.
1	Waste pipe to sink repaired.
3	Accumulations of trade refuse removed.

All bakehouses were limewashed or otherwise cleansed at least twice during the year.

TABLE No. 16

HOME WORK.

	OUTWORKERS										Inspections of Outworkers' Premises	Outwork in Unwholesome Premises		Outwork in Infected Premises		Visits to Employers Premises	
	Lists received from Employers					Notices Served on Occupiers as to Keeping or Sending Lists	Prosecutions Failing to send Lists					Instances	Notices Served	Instances	Orders Made		
	Sending Twice in the Year		Sending Once in the Year														
	Lists	Outworkers Contractors	Outworkers Workmen	Lists	Outworkers Contractors												Outworkers Workmen
Wearing Apparel— Making, Cleansing and Washing	170	...	530	4	...	11	All Occupiers were Notified	...	5086	...	...	...	...	...	...	...
Household Linen	155	388	4028	7	...	13		...		178	80	12	12	157			
Furniture and Upholstery	4	...	4	...	...	...		...		...	...	...	...	...
Paper Bags	5	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	334	388	4573	11	...	24	...	...	5086	178	80	12	12	157		

The approximate number of outworkers over which the department required to exercise supervision during the year was 1,500.
The names and addresses of all outworkers and contractors who resided outside the city were forwarded to the District Council of the District in which they resided.
614 sanitary defects, nuisances, etc., were discovered and remedied.
All work found on infected premises was disinfected,

COMMON LODGING HOUSES.

Number on Register at 1st January .....	.....	.....	.....	53
Number Registered during the year .....	.....	.....	.....	1
Number of lodgers for whom there was accommodation .....	.....	.....	.....	1,430
Number of visits during the year by lodging-house Inspector .....	.....	.....	.....	2,851
Statutory notices served for nuisances .....	.....	.....	.....	74
Verbal notices for breaches of Byelaws .....	.....	.....	.....	513

The accommodation varies from 5 to 319 persons to a house.

On visiting the lodging houses your officer paid special attention to the general condition of the premises, including cleanliness, lighting and ventilation, and also to the condition of the bedding. The prevention of overcrowding was strictly enforced.

All the houses were limewashed regularly and the bedding cleansed or renewed at intervals.

No case of infectious disease occurred in any of the houses during the year.

A number of sanitary defects were discovered for which notices were served on the owners or persons responsible.

5 houses were demolished under a Street Widening Scheme.

RAG FLOCK ACT, 1911.

During the year 60 inspections of premises where Rag Flock is sold were made, and 10 samples of flock were taken for analysis and found to be up to standard.

SMOKE NUISANCE.

During the year 44 observations were made for the detection of black smoke being emitted in such quantities as to be a nuisance.

OFFENSIVE TRADES.

During the year 485 visits were made to the premises in which offensive trades were carried on throughout the City, in order to ensure that the Bye-Laws with respect to same were being complied with.

TABLE No. 17

LEGAL PROCEEDINGS.

	Summonses.	Orders.	Fines.
			£ s. d.
Under Public Healths Acts—			
For abatement of nuisances	867	132	16 4 0
Disobedience of Justices' Orders	22	—	3 3 0
Having unsound carcase of a pig deposited for the purpose of sale and intended for the food of man	2	—	6 0 0
Failure to remove manure within prescribed period	3	—	3 0 0
Keeping a Common Lodging House without such being registered	2	—	2 5 0
Conveying unsound shellfish for sale	2	—	4 0 0
Establishing the trade of a Fellmonger without consent	1	—	—
Under Dairies, Cowsheds and Milkshops Order	10	—	9 15 0
Under Bye-Laws for the Regulation of Piggeries	7	—	0 10 0
Under Belfast Corporation Acts	6	—	1 5 0
Under Bye-Laws for the decent and seemly convey- ance of meat through the public thorough- fares	15	—	4 2 6
Under Merchandise Marks Act	20	—	6 5 0
Under Bye-Laws with respect to Common Lodg- ing-Houses	7	—	4 17 6
Under Factory and Workshop Act	2	—	—
Under Diseases of Animals Acts:			
Sheep Scab and Sheep Dipping Orders	17	—	22 19 0
Bovine Tuberculosis Order	2	—	5 0 0
Under Sale of Food and Drugs Acts	—	—	84 15 0

RAINFALL.

The following Table, kindly supplied by Mr. W. I. Quinn, Secretary to the Belfast City and District Water Commissioners, shows the rainfall in inches during the several months of the year 1929 as recorded at the Water Works at Old Park, compared with the preceding ten years.

TABLE No. 18

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
January ...	4.48	4.78	5.42	4.62	4.84	5.06	3.16	5.09	3.57	7.63	2.29
February ...	1.65	1.83	0.57	3.84	6.39	0.85	4.15	4.80	1.75	4.61	4.23
March ...	3.76	2.72	2.24	1.28	2.53	1.36	1.24	1.52	2.65	3.79	0.57
April ...	1.07	2.50	0.89	3.62	3.28	3.15	3.89	1.93	1.26	1.40	1.28
May ...	1.24	3.40	1.52	1.67	1.43	5.12	6.23	2.30	1.43	1.65	2.93
June ...	2.04	2.96	0.21	2.18	0.49	4.32	0.41	1.97	3.91	4.83	3.12
July ...	0.17	2.37	3.22	3.52	1.60	4.42	3.96	3.74	2.93	2.35	3.51
August ...	3.29	2.17	3.18	3.63	7.40	5.71	1.70	3.67	3.10	3.82	5.67
September ...	3.26	2.36	1.71	1.98	4.34	6.93	3.96	2.23	5.42	2.13	0.83
October ...	1.70	6.57	4.21	1.82	5.80	3.00	3.47	3.85	3.66	7.38	4.33
November ...	3.07	3.26	2.97	1.39	4.20	4.17	1.86	4.18	4.84	5.61	5.10
December ...	7.41	5.67	3.73	2.86	5.78	4.83	4.68	1.05	2.91	4.55	7.67
Total ...	<u>33.14</u>	<u>40.59</u>	<u>29.87</u>	<u>32.41</u>	<u>48.08</u>	<u>48.92</u>	<u>38.71</u>	<u>36.33</u>	<u>37.43</u>	<u>49.75</u>	<u>41.53</u>

TABLE No. 19

Cause of Death.	Under 1 year.		1 and under 5 years.		5 and under 15 years.		15 and under 25 years.		25 and under 45 years.		45 and under 65 years.		65 and upwards.		Total.		Grand Total.
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Accidents—Motor	—	—	5	2	10	3	9	1	10	2	12	6	5	5	51	19	70
Various	—	—	3	3	2	1	3	—	10	—	9	1	2	5	32	17	39
Cause of Death Unknown	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Drowning	1	—	—	—	1	—	1	—	1	—	2	—	—	—	7	—	7
Gunshot Wounds	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Gas Poisoning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Heart Failure	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	3	7
Inattention at Birth	1	—	—	—	—	—	—	—	—	—	1	2	3	2	12	3	15
Natural Causes	3	3	—	—	—	—	—	—	3	—	6	2	1	2	3	3	6
Overlying	1	2	1	—	1	—	1	—	4	—	3	—	—	—	12	2	14
Septicaemia	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Shock, etc., due to Burns and Scalds	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	2	2
Stillborn	2	1	5	3	—	1	1	3	—	1	—	—	4	8	8	13	21
Strangulation	3	—	—	—	—	—	—	—	—	—	—	—	—	3	3	—	3
Suicide	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	—	—	—	—	—	—	—	—	10	7	16	2	6	32	20	10	42
															166	65	231

SCHOOLS.

The sanitary condition and water supply of schools, especially public elementary schools; the action taken in relation to the health of the scholars and for preventing the spread of infectious disease.

Perhaps the last part of this heading may be taken first. Reference should be made to that section of this Annual Report which deals with infectious disease. The work accomplished will be found in that section. It must be laid down courteously but clearly that so far, at least, as the non-notifiable diseases, such as measles and whooping cough, are concerned, such can only be harnessed and dealt with by means of a scheme of inter-notification between Headteachers, School Attendance Officers and the Medical Superintendent Officer of Health. This scheme will be brought before the Public Health Committee and the Education-Medical Services Sub-Committee in the autumn of 1930. It is a matter of the first moment that this scheme should be operated with felicity and punctuality by all concerned; otherwise the knowledge of non-notifiable disease in the city, daily, by your Medical Officer will be casual, and, in effect, quite useless. Eighteen years have passed since I introduced such a scheme into an English Municipal Borough. Such schemes, introduced by their Medical Officers of Health, are now in operation throughout England and Scotland. The Belfast scheme, like those across the water, will call for a little clerical work, daily, on the part of Headteachers (and a great deal on the part of the Medical Superintendent Officer of Health and his staff). Without this scheme we shall be dependent upon casual scraps of information. At the moment of writing this report, my means of knowledge of non-notifiable disease in the city is woefully weak. I am confident of your Council's kind support in this connection.

Private Schools: During the year I decided to have an enquiry into private schools in the city. 45 schools were accordingly inspected. In 14 instances legal notices were served with the following results:—

In 9 schools additional sanitary accommodation was provided.

In 2 schools water closets were cleansed and repaired.

In 1 school new drains were provided.

In 1 school an offensive ashpit was abolished and a bin provided.

In 1 school the roof and spouting were repaired and dampness abated.

In 18 cases where the rooms used as classrooms were situate 20 feet above the level of the ground, these were reported to the City Surveyor with a view to Mr. Donald satisfying himself as to whether there was sufficient means of escape in case of fire.

Transferred Schools: During the year references as to nuisances existing in 123 schools were reported to me, principally by my colleague, Dr. Fulton, with the following results:—

In 4 cases roofs and spouting were repaired.

In 4 cases floors were repaired.

In 3 cases drains were cleansed.

In 2 cases drinking water was provided.

In 6 cases urinals were repaired or provided.

In 9 cases water closets were repaired or provided.

In 4 cases bins were provided.

In 34 cases walls, etc., were cleansed and repaired.

In 7 cases miscellaneous nuisances were abated.

In 68 cases no nuisance was found on inspection.

In 2 cases the schools are to be closed, and

In 1 case the building is to be reconstructed.

Non-transferred Schools:

- In 4 cases drains were cleansed.
- In 1 case grating was provided.
- In 8 cases water closets were cleansed and repaired.
- In 6 cases urinals were cleansed and repaired.
- In 2 cases waste pipes were cleansed.
- In 5 cases roofs were repaired.
- In 3 cases spouting was repaired.
- In 1 case the ashpit was removed.
- In 2 cases bins were provided.
- In 1 case water was provided.
- In 4 cases minor repairs were carried out.
- In 11 cases windows were cleansed.
- In 1 case floors were cleansed.
- In 1 case walls were distempered.
- In 7 cases miscellaneous nuisances were abated.

HOUSING OF THE WORKING CLASSES ACT.

Official Representations by Medical Superintendent Officer of Health with respect to premises unfit for Human Habitation.

Premises.	Date of Representation.	Total Houses Represented.
35 Alexander Street	5/11/29	1
1 and 2 Tate's Row, Greencastle	3/12/29	2
1 to 29 do.	do.	15
31 to 40c Brick Row, Greencastle	do.	10
41 and 42 do.	do.	1
43 (side door) do.	do.	—
44 to 76 do.	do.	33
5 Boyd's Court, Greencastle	do.	1
8 do.	do.	1
10 and 11 do.	do.	2
14 to 26 do.	do.	13
264 Newtownards Road (Eleven premises)	17/12/29	11

Proceedings under Sections 32, 33 and 34 of The Housing of the Working Classes Act, 1890.

- (1) 3 Representations embracing 90 Houses.
- (2) None.
- (3) None.
- (4) None.
- (5) None.

Number of New Houses erected during the year:—

(a) Total (including number given separately under (b))	2,475
(b) With State assistance under the Housing Acts—	
(I.) By the Local Authority	145
(II.) By other bodies or persons	2,277

MILK SUPPLY.

Milkshops—

On Register 1st January	.....	.....	.....	.....	.....	1,517
New Registrations effected during the year	.....	.....	.....	.....	.....	209
Removed from Register during the year	.....	.....	.....	.....	.....	236
Number of Visits made during the year	.....	.....	.....	.....	.....	4,679
Special inspections with a view to the discovery of unregistered persons selling milk	.....	.....	.....	.....	.....	153
Number of requests for registration refused	.....	.....	.....	.....	.....	4
*Number of unregistered persons discovered selling milk	.....	.....	.....	.....	.....	71
Number of new vessels provided by vendors for the storage, etc., of milk	.....	.....	.....	.....	.....	235
Verbal notices given	.....	.....	.....	.....	.....	62

*In the majority of instances where unregistered persons were found selling milk ignorance of the law was pleaded. If the premises were suitable the offenders had their names placed on the register and if unsuitable they immediately ceased selling milk.

Return shewing the number of Milkshops and the Inspections made in each of the several Dispensary Districts.

Dispensary Districts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Purveyors	58	178	194	122	66	125	6	13	91	108	153	113	76	...	115	72	1490
Inspections	244	741	423	499	180	308	13	51	246	338	552	380	181	...	260	263	4679

Cowsheds—

On Register	.....	.....	.....	.....	.....	89
Number of Cows	.....	.....	.....	.....	.....	1,113
Number of inspections made	.....	.....	.....	.....	.....	564
New Cowsheds erected during the year	.....	.....	.....	.....	.....	1
All Cowsheds were limewashed periodically throughout the year.						

Return shewing the number of Cowsheds and the number of inspections made in each of the several Dispensary Districts.

Dispensary District	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Cowsheds	...	2	2	8	...	4	4	17	21	7	6	4	10	1	3	...	89
Inspections	...	10	5	64	...	19	12	111	154	26	49	27	63	...	24	...	564

INSPECTION AND SUPERVISION OF FOOD.

(a) **Milk Supply.** On the 1st January, 1929, there were in the City of Belfast 89 Cowsheds in which were housed during the winter months 1,113 cows. There were also 1,517 Registered Purveyors of Milk including milkshops and carts.

All the Cowsheds, Milkshops and Purveyors' Carts were inspected regularly in order to ensure that the provisions of the Dairies, Cowsheds and Milkshops (Ireland) Order, 1908, and Regulations made thereunder were complied with, especially in regard to cleanliness. In all 5,243 inspections were made. There are two Officers especially detailed for this work, and these Officers see that the terms of the Order and Regulations are rigidly enforced.

During the year 209 new purveyors were added to the Register and the names of 236 persons who had ceased to sell milk removed, leaving a total of 1,490 Registered Purveyors at the end of the year. Four requests for registration were refused owing to the premises on which it was proposed to sell milk being unsuitable for the purpose. 71 unregistered persons were discovered selling milk and when interviewed by the Inspector, in the majority of cases ignorance of the law was pleaded, but on being informed of the necessity for registration all those whose premises were suitable had their names placed on the register and the remainder ceased to sell milk. On 62 premises slight defects were discovered; these defects were remedied on verbal notices being given to the occupiers. For the better storage of milk 235 new vessels were provided.

Ten persons were prosecuted for offences against the Order, and fines amounting to £9 15s. and costs were imposed. 179 samples of milk were taken and submitted to the City Bacteriologist for examination.

(b) **Meat and Other Foods.** All meat sold for human consumption in the City of Belfast must be examined at the Meat Inspection Department of the City Abattoir.

The Staff of the Meat Inspection Department consists of a Veterinary Surgeon and six qualified Meat Inspectors.

Under the heading of Meat Inspection a full detailed report of animals slaughtered and inspected is given in the report of work done at the Meat Inspection Department.

There are no private slaughter houses in the City, these having been abolished in the year 1914, and compensation paid to the owners, and the slaughter of all animals for human consumption must be carried out at the City Abattoir.

The premises used for the sale of Meat, Food, &c., were regularly inspected by the Officers of the Public Health Department and during the year 1929, 11,673 such inspections were carried out. These include 1,936 visits to Butchers' Shops; 3,007 to Confectionery Shops; 261 to Fish Shops; 226 to Fish and Chip Shops; 907 to Fruit Shops; 2,713 to Grocery Shops; 284 to Ice Cream Shops; 149 to Markets; 1,085 to Provision Shops; 508 to Railway Stations; 135 to Meat Factories; 30 to Cold Stores; 28 to other premises, and the inspection of 286 Hawkers' Carts, &c.

29 carcasses of pigs; 1 barrel of pork; 40 lbs. of sausages, 22 rabbits; 2 lots of cockles, and 52 boxes of tomatoes, were seized in the City and destroyed, and 70 crates of lettuce; 2 sides of bacon; 311 barrels of pears; 8 boxes of fish fillets; 43 trays of Dutch tomatoes; and 18 boxes of tomatoes from Canary Islands, were seized at the Port and destroyed as being unfit for the food of man.

(c) **Adulteration, &c.** The total number of samples taken under the Sale of Food and Drugs Acts and submitted to the City Analyst for examination during the year was 2,234. Of these 177 were certified by the Analyst to be adulterated or not up to standard—these included 4 samples of butter; 45 of buttermilk; 1 of gin; 1 of ham and chicken roll; 1 of lime juice cordial; 1 of pepper; 1 of sauce; 5 of sausages; 2 of skimmed milk; and 116 of sweetmilk. 105 prosecutions were instituted and 75 convictions obtained; 25 cases were dismissed and in 5 cases the defendants were discharged on payment of costs.

TABLE No. 20

Return showing particulars of samples of food, etc., taken for analysis during the year 1929.

Nature of Sample.	Samples taken.	Adulterations.	Prosecutions.	Convictions.	Dismissals.	Discharged on payment of costs.	Fines.
Aerated water ...	8	—	—	—	—	—	—
Aspirin tablets ...	2	—	—	—	—	—	—
Baked beans ...	3	—	—	—	—	—	—
Baking powder ...	15	—	—	—	—	—	—
Baking soda ...	4	—	—	—	—	—	—
Barley ...	7	—	—	—	—	—	—
Beef suet ...	1	—	—	—	—	—	—
Bisto ...	1	—	—	—	—	—	—
Blood medicine ...	1	—	—	—	—	—	—
Boracic ointment ...	2	—	—	—	—	—	—
Brawn ...	1	—	—	—	—	—	—
Bread (informal) ...	1	—	—	—	—	—	—
Butter ...	140	3	3	3	—	—	4 0 0
Butter (informal) ...	12	1	—	—	—	—	—
Buttermilk ...	213	40	33	32	—	1	47 2 6
Buttermilk (informal) ...	11	5	—	—	—	—	—
Carbonate of magnesia...	2	—	—	—	—	—	—
Cascara sagrada tablets	1	—	—	—	—	—	—
Castor oil ...	2	—	—	—	—	—	—
Cheese ...	19	—	—	—	—	—	—
Citrate of magnesia ...	6	—	—	—	—	—	—
Cocoa ...	14	—	—	—	—	—	—
Cocoa and milk powder...	1	—	—	—	—	—	—
Cod Liver Oil ...	2	—	—	—	—	—	—
Coffee ...	2	—	—	—	—	—	—
Coffee and Chicory ...	4	—	—	—	—	—	—
Compound syrup of figs (Informal) ...	2	—	—	—	—	—	—
Condensed Milk ...	7	—	—	—	—	—	—
Corned beef ...	2	—	—	—	—	—	—
Cream ...	2	—	—	—	—	—	—
Cream of tartar ...	13	—	—	—	—	—	—
Custard powder ...	1	—	—	—	—	—	—
Dried fruit ...	2	—	—	—	—	—	—
Dripping ...	72	—	—	—	—	—	—
Dripping (informal) ...	3	—	—	—	—	—	—
Egg substitute powder...	3	—	—	—	—	—	—
Epsom salts ...	3	—	—	—	—	—	—
Farola ...	2	—	—	—	—	—	—
Fat frier (vegetable fat)	1	—	—	—	—	—	—
Fish paste ...	1	—	—	—	—	—	—
Fruit syrup ...	1	—	—	—	—	—	—
Fruit wine ...	3	—	—	—	—	—	—
Gin ...	2	1	1	1	—	—	2 0 0
Ginger cordial ...	1	—	—	—	—	—	—
Glauber salts ...	2	—	—	—	—	—	—
Glycerine ...	1	—	—	—	—	—	—
Ground ginger ...	4	—	—	—	—	—	—
Ham and chicken roll ...	1	1	—	—	—	—	—
Herb beer ...	1	—	—	—	—	—	—
Honey ...	1	—	—	—	—	—	—
Hydrogen peroxide (informal) ...	1	—	—	—	—	—	—
Ice Cream ...	3	—	—	—	—	—	—
Ice foam crystals ...	1	—	—	—	—	—	—
Iron beer ...	1	—	—	—	—	—	—
Lard ...	43	—	—	—	—	—	—
Lactec (sour skim milk)	1	—	—	—	—	—	—
Lacone ...	1	—	—	—	—	—	—

TABLE No. 20—Continued.

Nature of Sample.	Samples taken.	Adulterations.	Prosecutions.	Convictions.	Dismissals.	Discharged on payment of costs.	Fines.
Lemon cordial ...	1	—	—	—	—	—	—
Lentils ...	4	—	—	—	—	—	—
Lime juice cordial ...	1	1	1	1	—	—	0 5 0
Malted milk ...	1	—	—	—	—	—	—
Margarine ...	5	—	—	—	—	—	—
Margarine (informal) ...	1	—	—	—	—	—	—
Meat paste ...	1	—	—	—	—	—	—
Mustard ...	10	—	—	—	—	—	—
Neaves food ...	1	—	—	—	—	—	—
Non-alcoholic stout ...	1	—	—	—	—	—	—
Olive oil ...	4	—	—	—	—	—	—
Ostermilk (informal) ...	1	—	—	—	—	—	—
Parrishes chemical food ...	1	—	—	—	—	—	—
Pepper ...	9	—	—	—	—	—	—
Pepper (informal) ...	1	1	—	—	—	—	—
Pickles ...	1	—	—	—	—	—	—
Pork and beans ...	1	—	—	—	—	—	—
Preserved peas ...	3	—	—	—	—	—	—
Pudding mixture ...	2	—	—	—	—	—	—
Raisins ...	2	—	—	—	—	—	—
Raspberry jam ...	5	—	—	—	—	—	—
Raspberry crystals ...	1	—	—	—	—	—	—
Relish ...	2	—	—	—	—	—	—
Rice ...	3	—	—	—	—	—	—
Roast fat ...	2	—	—	—	—	—	—
Rum ...	2	—	—	—	—	—	—
Sauce ...	16	1	1	1	—	—	0 5 0
Sausages ...	24	5	4	4	—	—	5 15 0
Seidlitz powders ...	4	—	—	—	—	—	—
Skimmed milk ...	4	2	2	2	—	—	20 0 0
Shredded beef suet ...	1	—	—	—	—	—	—
Spice ...	2	—	—	—	—	—	—
Sugar ...	1	—	—	—	—	—	—
Sweetmilk ...	1300	109	60	31	25	4	45 0 0
Sweetmilk (informal) ...	25	7	—	—	—	—	—
Sweetmilk for extraneous dirt (informal) ...	92	—	—	—	—	—	—
Sulphur ointment ...	1	—	—	—	—	—	—
Syrup of figs ...	1	—	—	—	—	—	—
Tapioca ...	1	—	—	—	—	—	—
Tawny wine ...	2	—	—	—	—	—	—
Tea ...	6	—	—	—	—	—	—
Tomato soup ...	1	—	—	—	—	—	—
Vinegar ...	19	—	—	—	—	—	—
Whiskey ...	8	—	—	—	—	—	—
Wine, ruby ...	1	—	—	—	—	—	—
Zinc ointment ...	2	—	—	—	—	—	—
	2234	177	105	75	25	5	124 7 6

In 7 cases of buttermilk, 1 of ham and chicken roll, 1 of sausages, and 49 of sweetmilk, the percentage below standard was so small no proceedings were taken, but owners were cautioned.

In 1 case of butter, 5 of buttermilk, 1 of pepper and 7 of sweetmilk the samples were informal.

TABLE No. 21

Return showing particulars of samples of sweetmilk taken for analysis during the year.

Month.	No. of samples taken.	Average percentage.		Highest percentage of Fats with the percentage of solids (not Fats).		Lowest percentage of Fats with the percentage of solids (not Fats).		Lowest percentage of solids (not Fats) with the percentage of Fats.	
		Fats.	Solids not Fats.	Fats.	Solids not Fats.	Fats.	Solids not Fats.	Fats.	Solids not Fats.
January	121	3.55	8.83	7.90	8.62	3.50	9.34	2.42	8.73
February	132	3.57	8.86	5.60	8.69	3.60	9.67	2.54	8.98
March	106	3.54	8.83	4.30	9.02	3.50	9.34	2.06	8.59
April	108	3.44	8.82	4.80	9.31	4.60	9.40	1.81	8.97
May	131	3.29	8.81	4.60	8.86	3.80	9.46	2.34	9.18
June	89	3.12	8.80	4.50	8.87	2.83	9.23	2.35	9.11
July	131	3.27	8.71	7.80	8.62	3.50	9.25	2.16	8.36
August	89	3.44	8.71	5.70	8.63	2.90	9.22	2.30	8.74
September	85	3.43	8.73	4.95	8.72	3.70	9.21	2.34	9.07
October	136	3.68	8.82	5.20	8.86	4.40	9.30	2.73	8.08
November	111	3.69	8.88	4.90	9.02	3.30	9.34	2.48	7.69
December	86	3.70	8.85	5.50	9.00	4.60	9.44	2.40	9.26
	1325								

TABLE No. 22

Return showing shops, etc., visited during the year 1929.

Description of Shops.					No. of Visits.
Butcher	.....	.....	.....	.....	1,936
Confectioner	.....	.....	.....	.....	14
Dairies	.....	.....	.....	.....	118
Fish	.....	.....	.....	.....	261
Fish and Chips	.....	.....	.....	.....	226
Fruit	.....	.....	.....	.....	902
Grocer	.....	.....	.....	.....	2,713
Ice Cream	.....	.....	.....	.....	269
Markets	.....	.....	.....	.....	149
Provision	.....	.....	.....	.....	1,085
Railway Stations	.....	.....	.....	.....	508
Meat Factories	.....	.....	.....	.....	135
Cold Stores	.....	.....	.....	.....	30
Hawkers carts, etc.	.....	.....	.....	.....	286
Others	.....	.....	.....	.....	28

SEIZURES.

29 Carcases of Pigs.

1 Barrel of Pork.

40lbs. Sausages.

22 Rabbits.

2 lots of Cockles.

52 boxes of Tomatoes.

MEAT INSPECTION.

The following is a summary of the work carried out under the Supervision of the City Veterinarian (Capt. John M'Clure Barry, M.R.C.V.S.).

Table showing the number and kind of animals slaughtered and inspected in the Municipal Abattoir during the year 1st April, 1929—31st March, 1930, also the number of carcasses condemned (from all causes) as being unfit for human consumption.

(The figures for the preceding year are given for comparison).

TABLE (1).

Species.	Number Slaughtered.		Number Condemned.	
	1929-1930.	1928-1929.	1929-1930.	1928-1929.
COWS ...	25,882	28,268	687	761
HEIFERS ...	1,598	1,332	14	20
BULLOCKS ...	16,918	14,906	48	28
BULLS ...	762	786	4	2
CALVES ...	2,606	4,008	41	60
SHEEP AND LAMBS ...	83,212	86,744	150	257
GOATS ...	1,406	1,291	29	16
PIGS ...	11,305	19,443	76	136

TABLE (2).

Return showing the Carcasses seized in the Municipal Abattoir during the year and totally destroyed as being unfit for food.

	Cows	Heifers	Bulls	Bullocks	Calves	Sheep and Lambs	Goats	Pigs	Total
Actinomycosis .....	...	...	...	1	...	...	...	...	1
Decomposed .....	...	...	1	1	3	19	...	7	31
Dropsical	52	...	...	1	4	95	29	3	184
Emaciated	40	...	...	2	...	1	...	1	44
Fevered	56	3	...	2	9	13	...	29	112
Gangerene	2	...	...	...	...	...	...	...	2
Inflammation	2	...	...	...	2	...	...	1	5
Injured	7	...	...	...	1	6	...	...	14
Jaundice .....	...	...	...	...	1	...	...	1	2
Joint-Ill .....	...	...	...	...	7	...	...	...	7
Neoplasms	58	...	...	1	...	5	...	...	64
Pericarditis	2	...	...	2	...	...	...	1	5
Peritonitis .....	...	...	...	...	...	...	...	2	2
Pyæmia	1	...	...	...	...	...	...	...	1
Septicaemia	21	...	1	4	2	6	...	1	35
Septic-Mastitis	1	...	...	...	...	...	...	...	1
Septic-Nethritis	1	...	...	...	...	...	...	...	1
Septic Pneumonia.....	3	...	...	1	1	...	...	...	5
Strongyli .....	...	...	...	...	...	4	...	...	4
Tuberculosis	441	11	2	33	1	...	...	29	517
White Scour .....	...	...	...	...	7	...	...	...	7
Other Conditions .....	...	...	...	...	3	1	...	1	5
Total	687	14	4	48	41	150	29	76	1049

TABLE (3).

Showing comparison between Tuberculosis and Other Diseases as causes of condemnation of carcasses of animals slaughtered in the Municipal Abattoir during the year.

			CATTLE			Sheep and Lambs	Goats	Pigs	Total
			Cows	Other Cattle	Calves				
Tuberculosis	Total	...	441	46	1	Nil	Nil	29	
	Partial	...	7	6	Nil	Nil	Nil	Nil	
	Total	...	448	52	1	Nil	Nil	29	
Other Diseased Conditions	Total	...	246	20	40	150	29	76	
	Partial	...	25	8	Nil	6	Nil	4	
	Total	...	271	28	40	156	29	80	

The following table shows the percentage by age of the animals slaughtered and condemned for Tuberculosis:—

SPECIES			BY AGE.							
			One Month to One Year	Per. Cent.	From One to Three Years	Per Cent.	Three Years to Six Years	Per Cent.	Over Six Years	Per Cent.
Cows	...	...	...	...	...	...	...	...	441	100
Heifers	...	...	...	...	11	100	...	...	...	...
Bullocks	...	...	...	...	23	69.69	10	30.30	...	...
Bulls	...	...	...	...	1	50.00	1	50.00	...	...
Pigs	...	...	29	100	...	...	...	...	...	...
Calves	...	...	1	100	...	...	...	...	...	...

The following table shows the percentage by condition of the animals slaughtered and condemned for Tuberculosis:—

SPECIES			BY CONDITION							
			Good		Fair		Indifferent		Poor	
			Number	Per- centage	Number	Per- centage	Number	Per- centage	Number	Per- centage
Cows	...	...	8	1.81	167	37.86	200	45.35	66	14.96
Heifers	...	...	3	27.27	7	63.63	1	9.09	...	...
Bullocks	...	...	2	6.06	21	63.63	8	24.24	2	6.06
Bulls	...	...	...	...	...	...	1	50.00	1	50.00
Pigs	...	...	...	...	29	100	...	...	...	...
Calves	...	...	...	...	29	100	...	...	...	...

INSPECTION OF MEAT PREPARED OUTSIDE THE CITY BOUNDARY.

Table showing amount and the amount condemned.

		BEEF			MUTTON		PORK	VEAL	GOATS
		Sides	Quarters	Cuts	Carcases	Cuts	Carcases	Carcases	Carcases
Examined	...	1,887	152	2,913	2,304	235	27	7	16
Condemned	...	27	6	3	10	Nil	13	Nil	Nil

		HEADS		Beef Tongues	HEARTS		LUNGS		LIVERS	
		Beef	Mutton		Beef	Mutton	Beef	Mutton	Beef	Mutton
Examined	...	972	Nil	966	895	2,184	629	2,169	962	2,168
Condemned	...	19	Nil	16	12	Nil	28	Nil	150	104

INSPECTION OF CATTLE IN DAIRIES.

The number of Registered Cowkeepers inside the City Boundary was 89. Their premises at the time of inspection accommodating 1,113 milch cows. Systematic Inspection was carried out, the cows being carefully examined as to their health, condition, cleanliness, etc., and generally speaking were found to be satisfactory.

APPENDIX.

TABLE (1).

Return of Animals Slaughtered in the Municipal Abattoir.
The Figures for the previous year are given for comparison).

Species.		Number Slaughtered. 1st April, 1929-1930.	Number Slaughtered. 1928-1929.
Cattle	...	45,160	45,292
Calves	...	2,606	4,008
Sheep and Lambs	...	83,212	86,744
Pigs	...	11,305	19,443
Goats	...	1,406	1,291
Total	...	143,689	156,778

TABLE (2).

The following return shows the number of Diseased Organs seized and destroyed as being unsound and unfit for human food, during the year 1929-1930, also the figures for the preceding year are given for comparison:—

		31/3/29. Year ending.	31/3/30. Year ending.	Increase.	Decrease.
Beef	Heads	80	64	—	16
"	Tongues	76	63	—	13
"	Hearts	53	33	—	20
"	Lungs	4,958	4,106	—	852
"	Livers	13,641	11,664	—	1,977
"	Stomachs	50	34	—	16
"	Udders	2,254	2,068	—	186
"	Kidneys	210	309	99	—
Pork	Heads	6	5	—	1
"	Tongues	6	5	—	1
"	Hearts	35	6	—	29
"	Lungs	98	34	—	64
"	Livers	446	262	—	184
"	Kidneys	2	—	—	2
Goat	Livers	62	74	12	—
Mutton	Hearts	1	—	—	1
"	Lungs	4	—	—	4
"	Livers	9,737	8,490	—	1,247

Note: The above Table does not include the viscera of animals totally destroyed. In addition to the above summary there was 2 tons, 12 cwt. 5 lbs. of Beef, 2 qrs. 20 lbs. of Mutton, and 2 qrs. 16 lbs. of Pork seized as being unsound and unfit for human food.

I desire to express my thanks to the Staff of the Department for the manner in which they had carried out their duties.

(Signed),

JOHN M'CLURE BARRY,
City Veterinarian.

City Veterinarian's Office,
Municipal Abattoir,
Belfast.

COWSHEDS.

There are 89 registered cowsheds in the County Borough of Belfast, and at the end of April, 1930, 1,271 dairy cows were housed therein; these cows were producing about 2,400 gallons of milk per day.

The above cowsheds are inspected by the Inspector from time to time during the year, and in most cases they are found to be in good structural repair, well lighted and ventilated; they are limewashed twice each year (May and October) and also at any other time when limewashing is necessary.

Manure pits are attached to most cowsheds for the purpose of temporary storage of manure, etc.; these are kept cleansed regularly and no unnecessary accumulation of manure is allowed. In some cases the manure is removed directly from the cowsheds to the fields for cultivation purposes, and this is satisfactory.

The drainage of the cowsheds is, generally speaking, good; in some cases they are drained into impervious tanks, and these are cleansed from time to time, while in other cases the liquid manure is conveyed in pipes to the meadows and fields for irrigation purposes.

All dairy cows are on grass during the summer months, and the opportunity is taken to have several minor alterations carried out, which it would not be possible to do while the cowsheds are occupied. These alterations include—the addition of light and ventilation where necessary, paving and levelling of passages behind cows, and the repairing of drainage, etc. When these alterations are completed they greatly improve the cowsheds in question.

The same cleanliness is generally observed in the milk stores in which the milk utensils are kept; these stores are washed out daily and limewashed as often as may be necessary. The milk utensils are washed and scoured after use, and are generally found, on inspection to be sweet and clean.

Samples of milk for bacteriological examination are taken regularly from the cowkeepers in the city, and with the exception of one or two these are usually found to be in a very clean condition.

During the inspection of cowsheds attention is paid to the cleanliness of the milkers, and also the dairy cows, especially the udders, tails, etc.; these are kept groomed and brushed and are at all times kept as clean as possible.

Taking everything into consideration the cowsheds in the city are in a good sanitary condition and general cleanliness is observed.

BOVINE TUBERCULOSIS (N.I.) ORDER, 1926.

Under the Bovine Tuberculosis (N.I.) Order, 1926, which takes the place of the Bovine Tuberculosis (Ireland) Order, 1914, it is the duty of Local Authorities to examine all bovine animals suffering from Tuberculosis in certain specified forms.

The Order requires every person having in his possession or under his charge

- (a) A cow which is, or appears to be, suffering from tuberculosis of the udder, indurated udder or other chronic disease of the udder; or
- (b) Any bovine animal which is, or appears to be, suffering from tuberculous emaciation; or
- (c) Any bovine animal which is suffering from a chronic cough and showing definite clinical signs of tuberculosis,

to give information of the fact to a Constable of the Police Force for the area wherein the animal is, and the Constable in turn must transmit the information to the Local Authority and to the Department of Agriculture.

As soon as the information has been received by the local authority, the animal is examined by their Veterinary Inspector who furnishes the local authority with the report of such examination. If the Inspector's report shows that the animal is suffering from the disease it is the duty of the local authority to notify the owner that it is their intention to slaughter the animal unless he (the owner) objects, notice of which must be given by him in writing to the local authority. If the owner objects the local authority cannot carry out the slaughter until authorised by the Department of Agriculture.

When an animal has been slaughtered a post-mortem examination is carried out by the Veterinary Inspector and a certificate of the result of the post-mortem made out by the Veterinary Inspector.

Prior to slaughter a valuation is fixed by the Veterinary Inspector which must be agreed to by the owner. If the certificate of the post-mortem examination shows that the animal was not suffering the owner is entitled to an amount represented by the full valuation plus a further sum of 20/- as compensation; if the certificate shows that the animal was suffering from tuberculosis (not being advanced tuberculosis) then the owner receives as compensation an amount equal to three-fourths of the valuation agreed upon, and if the certificate reveals advanced tuberculosis one-fourth of the valuation is paid to the owner.

Owners of suspected animals brought into the City from outside areas have the option of (a) returning them to the districts from which they were brought; or (b) sending them to the slaughter house or other suitable premises in the district for examination.

During the year 1929, 99 animals were reported as suspicious, which necessitated the examination of 300. Of these 80 were slaughtered and post-mortem examinations carried out; 4 were sent back to the districts from which they were brought into the City, and the remainder were found not suffering on clinical examination. Of the animals slaughtered, 10 were found to be suffering from tuberculosis of the udder; 3 were giving tuberculous milk; 8 were suffering from tuberculous emaciation; 1 showed definite clinical signs of tuberculosis; 30 were affected with other forms of tuberculosis; and 28 were not affected. The total amount of compensation paid to the owners was £139 8s 9d.

PREVALENCE AND CONTROL OVER INFECTIOUS DISEASES.

There was a marked decline in the prevalence of the notifiable infectious diseases during the year; 1,492 notifications were received pursuant to the Infectious Diseases (Notification) Act, 1889, as compared with 2,717 in 1928, a decrease of 1,225.

Table 28 shows the distribution of the notified cases. It will be seen that the cases were fairly evenly distributed over the City, and that there was little or no tendency to localised epidemics. In a few Diphtheria cases the probable source of infection was traced to school contact with a Diphtheria carrier, whilst 10 cases of Scarlatina were known to have been in contact with a boy who was attending school and who was found to have had well-marked desquamation from Scarlatina.

With the exception of Influenza, to which reference has been made early in the report, the non-notifiable infectious diseases (Measles, Whooping Cough, Chicken Pox, etc.) were not unduly prevalent. The number of deaths from Whooping Cough was above the normal, 138 deaths were registered as compared with an average of 91 deaths registered annually for the 10 years 1919-1928.

During the year the non-notifiable infectious diseases treated in the Union Fever Hospital were as follows:—Measles 231 cases, Whooping Cough 132, Mumps 14, Chicken Pox 117, Rubella 8, Influenza 84.

The largest numbers of Measles and Whooping Cough occurred in April and May, but at no time during the year did the numbers assume epidemic proportions, and no special arrangements for hospital treatment of cases were called for.

On the receipt of a voluntary notification of any of the non-notifiable diseases or on receipt of the information that a case has been admitted to hospital the Health Visitor of the district concerned visits the house and gives advice to the mother as to the precautions to be taken to prevent the spread of infection, the necessity for obtaining early medical advice and treatment and for the adoption of methods for guarding against any complications of the disease.

Where it is found that an infected child cannot be properly isolated or that the accommodation in the house is not adequate for home nursing, hospital treatment is advised.

Our present method for Measles control is inadequate. Only a very small number of the cases are notified to the Public Health Authority; nearly all the fatal cases are in children under school age; in very few of the 77 fatal cases was any knowledge of the existence of the disease in the hands of the Department before death occurred.

We must devise some definite means of gaining knowledge of the cases as early in the disease as possible, while there is still hope of recovery. A notification scheme with this end in view is at present being prepared, and it is hoped to have this in operation at an early date. Any scheme must have the co-operation of Head Teachers and School Attendance Officers. Failing this, the disease will require to be made a notifiable one.

Having learned of the existence of cases we must make provision for (a) the admission to hospital of severe and complicated cases; (b) the supervision of the home nursing of mild cases; (c) the provision of skilled nursing assistance for cases nursed at home where such assistance is needed. There would appear to be adequate hospital accommodation for the treatment of all the non-notifiable infectious diseases at the Union Fever Hospital, where the accommodation is capable of being extended to 250 beds, and by the careful selection of cases for admission to hospital it is considered that the accommodation would be adequate even in an extensive epidemic. The provision of skilled home nursing assistance would relieve the hospital strain during an epidemic, and it is hoped that arrangements for the provision of home nursing will be completed at an early date.

The remarks concerning Measles apply equally to Whooping Cough. Early notification of cases, hospital accommodation and provision of home nursing are required.

TYPHUS FEVER.

No case of Typhus occurred in the City during the year. One case reported by the medical practitioner in attendance as suspicious of Typhus proved to be a case of Influenza.

17 cases were reported in County Tyrone in May, and letters of warning were sent by the Medical Superintendent Officer of Health to Dispensary Medical Officers in the City as to the possibility of cases arising from this source.

SMALL POX.

No case of Small Pox occurred in the City during the year. A reference to the report of the Belfast Port Sanitary Authority will show that a large number of Small Pox contacts arriving in England and Scotland on board ship from Eastern ports was notified to the Public Health Department. These contacts were kept under daily supervision and none developed the disease.

SCARLET FEVER.

The incidence of Scarlet Fever showed a most gratifying reduction in the year. 721 cases were notified, but on investigation 35 were found not suffering from the disease. In addition to those notified, 8 cases notified as Diphtheria and 1 as Typhoid Fever were found to be suffering from Scarlet Fever, which made the total number that occurred during the year 695; an attack rate of 1.7 per 1,000 of the population.

The number of cases which occurred during the preceding year was 1,749, and the average number notified annually during the 10 years 1919-1928 was 1,462.

In recent years the disease has been of a mild type. Only 8 deaths were registered during the year under review, equivalent to the low case mortality of 1.2 per cent. or a death rate of 0.02 per 1,000 of the population. The number of deaths registered during the preceding year was 21, and the average number registered annually during the 10 years, 1919-1928, was 43.

In 14 instances it was found that infection was probably contracted outside the City—the patients having been removed to the City before the minimum incubation period had elapsed.

DIPHTHERIA.

484 cases were notified, but on investigation 42 were found not suffering from the disease which made the total number of cases that occurred during the year 442, an attack rate of 1.1 per 1,000 of the population.

The number of cases that occurred during the preceding year was 561, and the average number notified annually during the 10 years, 1919-1928, was 415.

19 deaths were registered, equivalent to a case mortality of 4.3 per cent. or a death rate of 0.05 per 1,000 of the population.

The number of deaths registered during the preceding year was 16, and the average number registered annually during the 10 years, 1919-1928, was 32.

93 per cent.—viz., 411 of the cases, were treated in hospital, whilst 7 per cent.—viz., 31, were treated at home.

In all cases thorough investigation was carried out with the object of tracing the source of infection and preventing the spread of the disease. In one instance a Diphtheria “carrier” was the probable cause of a small number of cases in a school.

During the year a departure was made in the usual procedure for the exclusion of children from school. After Diphtheria had occurred in their homes, formerly, it was the custom to exclude all children from the affected houses until 14 days after the removal of the patients to hospital. It was felt that by following this procedure a good deal of school time was unnecessarily wasted, especially as we are in a position to determine whether the “contact” children are likely or unlikely to develop the disease or to be infective to others; this is determined by having the throat swabs of the contacts bacteriologically examined. If these examinations give negative results the children are allowed to return to school in two days.

The new arrangement was in operation for the last eight months of the year, and it has been found to work satisfactorily. No case of Diphtheria occurred which could have been the result of the earlier attendance of the Diphtheria contacts at school.

The number of throat and nose swabs taken from contacts and bacteriologically examined during the year was 664. Of these 101 were positive and 563 negative.

DIPHTHERIA ANTITOXIN.

A supply of Diphtheria Antitoxin is kept at six depots in the City, so as to be readily available at any time of the day or night for the use of medical practitioners.

During the year 22 phials of 4,000 units of antitoxin were obtained and issued to various medical practitioners in the City. This antitoxin was provided free of charge in necessitous cases, but where the patients, or parents of the patients, were able to pay, the serum supplied was replenished at their expense.

It is felt that the facilities thus provided for obtaining Diphtheria Antitoxin will lead to its earlier administration with the consequent saving of life, and the lessening of the risk of the dangerous sequelæ of the disease.

The facilities provided for the bacteriological examination of throat swabs at the Municipal Laboratory, Queen's University, have been largely availed of by medical practitioners in the City.

SCHICK TESTING AND IMMUNISATION AGAINST DIPHTHERIA.

These measures were only put into operation in a few cases during the year. A boy who had a persistent positive throat swab for 2 months was "Schick tested"; he proved to be susceptible and was immunised with Toxoid Antitoxin. The Diphtheria bacillus which he harboured proved to be non-virulent.

A number of school children who had been in contact with Diphtheria patients, and who had positive swabs were Schick tested and, where necessary, immunised with Toxoid Antitoxin.

It is intended, when the medical re-organisation of the Public Health Services is completed, that the Schick testing and immunisation of children against Diphtheria will be undertaken on a larger scale than has been possible during the year.

TYPHOID FEVER.

76 cases were notified. On investigation 9 cases were found not suffering from the disease, but 2 cases notified as Scarlet Fever and 1 as Simple Continued Fever were found to be suffering from Typhoid Fever, which made the total number of cases that occurred during the year 70, an attack rate of 0.17 per 1,000 of the population.

The number of cases which occurred during the preceding year was 178, and the average number notified annually during the 10 years 1919-1928 was 119.

Four deaths were registered, equivalent to a case mortality rate of 5.7 per cent., or a death rate of 0.01 per 1,000 of the population.

The number of deaths registered during the preceding year was 13, and the average number registered annually during the 10 years 1919-1928 was 12.

TABLE No. 23

Shewing the annual death rate per 1,000 of the population from Typhoid Fever during the twenty years 1910-1929; also the average rate for quinquennial periods.

Year.	Rate.		Year.	Rate.	
1910	0.04	} 0.05	1920	0.08	} 0.03
1911	0.04		1921	0.04	
1912	0.04		1922	0.02	
1913	0.05		1923	0.01	
1914	0.07		1924	0.007	
1915	0.02	} 0.05	1925	0.04	} 0.02
1916	0.05		1926	0.01	
1917	0.10		1927	0.02	
1918	0.06		1928	0.03	
1919	0.04		1929	0.01	

Average annual death rate for twenty years, 1910-1929—0.04.

Of the 70 cases that occurred, 24 were diagnosed as Typhoid, 1 as Paratyphoid A., and 45 as Paratyphoid B.

In 11 instances the notifications referred to persons who had come to the City for treatment, the cause of whose illness was subsequently diagnosed to be Enteric Fever.

Six cases of Typhoid Fever occurred amongst the in-patients of a general hospital in June. 7 cases of Paratyphoid B. Fever occurred in an institution, where the source of infection was traced to contact with a patient who had been admitted in the convalescent stage of the disease.

Careful investigations were made in all the cases, with a view to tracing the source of infection. Special attention was paid to the question of infection from shellfish as it has been found that shellfish gathered on the Belfast Lough foreshores are liable to be infected with Typhoid.

Professor W. James Wilson, of Queen's University, has isolated Typhoid Bacilli from a sample of crude sewage taken at the main Belfast Sewerage out-fall, and he has also isolated Typhoid from cockles obtained from the foreshore of Belfast Lough. The fact that Typhoid organisms can be isolated from these shellfish has given the Public Health Committee much anxiety. There is a grave danger of persons contracting Typhoid Fever through eating the contaminated shellfish. During June and July large notices were posted on hoardings in the City warning the public against the danger of eating shellfish from the Belfast Lough foreshore. In this connection it should be mentioned that the sale of shellfish gathered from the foreshore is legally prohibited and in the month of May we had a successful prosecution in the Summons Court of a man who was found selling such shellfish. It is hoped that in the near future the **gathering** of shellfish from the foreshore will be legally prohibited. One of the clauses of the Bill to be promoted by the Belfast Corporation in the Northern Ireland Parliament will make the gathering of these shellfish illegal.

In spite of the warnings and publicity given to this source of danger, it is surprising to find in our investigations of the Typhoid cases, that in eight instances there was a history of the patients having eaten shellfish.

None of the Enteric patients notified during the year had had any association with known Typhoid "carriers." We have two known Typhoid "carriers" in Belfast; both are elderly women who are of the "intermittent shedding" type. One of them harbours the B. Typhosus and the other the B. Paratyphosus B. Both are kept under observation and bacteriological examinations proved that, at the times of examination, they were not in an infective condition.

EPIDEMIC ENCEPHALITIS.

5 cases were notified. 1 was notified in the preceding year. None of the notified cases were of the acute type. All were cases showing the Parkinsonian syndrome.

There are about 100 cases of Chronic Encephalitis in the City; these are mostly the residual results of the epidemic of Acute Encephalitis Lethargica which occurred in 1924. A large proportion of these chronic cases are of the Parkinsonian type, some are children with "changed character," some are mentally defective and an occasional one is a border-line mental case.

No special arrangements have been made for the treatment and "after-care" of these patients. There were 36 admissions to the Union Fever Hospital of these cases during the year. Many of these were re-admissions; they come and go.

ERYSIPELAS.

122 cases were notified during the year, an attack rate of 0.3 per 1,000 of the population.

The number which occurred during the preceding year was 84, and the average number notified annually during the 10 years 1919-1928 was 91.

ACUTE POLIOMYELITIS.

One case of this disease was notified during the year. The average number notified annually during the 10 years 1919-1928 was 1.5.

CEREBRO-SPINAL FEVER.

11 cases were notified during the year, 1 of these was found not suffering from the disease, making 10 cases; an attack rate of 0.02 per 1,000 of the population. There was no "contact" connection between any of the cases notified or with any known cases in other areas.

OPHTHALMIA NEONATORUM.

46 cases were notified during the year, and 8 cases in the preceding year. The following tables gives a summary and particulars of cases notified:—

TABLE No. 24

Notified	Treated		Vision Unimpaired	Vision Impaired	Total Blindness	Died
	At Home	In Hospital				
46	15	31	43	3	—	1

During 1929 71 cases of inflammation of or discharge from eyes were reported by midwives; of these 46 were notified as Ophthalmia by the medical practitioners called to attend them.

MEASLES.

77 deaths were registered as having been caused by this disease, equivalent to a death rate of 0.19 per 1,000 of the population.

The number registered during the preceding year was 169, and the average number registered annually during the ten years 1919-1928 was 100.

WHOOPIING COUGH.

138 deaths were registered during the year, equivalent to a death rate of 0.33 per 1,000 of the population.

The number registered during the preceding year was 50, and the average number registered annually during the ten years 1919-1928 was 91.

DIARRHŒA.

149 deaths of children under 2 years of age were registered as having been caused by this disease during the year, equivalent to a death rate of 0.36 per 1,000 of the population.

The number registered during the preceding year was 196, and the average number registered annually during the ten years 1919-1928 was 212.

PUERPERAL FEVER.

23 cases of this disease were notified.

The number of cases notified during the preceding year was 14, and the average number notified annually during the ten years 1919-1928 was 20.

14 deaths occurred, equivalent to a case mortality of 60.9 per cent.

The number of deaths which occurred during the preceding year was 11, which gave a case mortality of 78.6 per cent.

The following is a summary showing particulars with respect to the cases treated:—

	Number.	Recovered.	Died.
Cases attended by medical practitioners and qualified nurses	14	6	8
Cases attended by medical practitioners and unqualified nurses	2	—	2
Cases attended by qualified nurses and no medical practitioners	7	3	4

TABLE No. 25

Shewing the rate per 1,000 of the population of cases of Infectious Diseases notified, pursuant to the Infectious Disease (Notification) Act, 1889, during the twenty years 1910-1929; also the average for the quinquennial periods.

Year.	Rate.		Year.	Rate.	
1910	3.4	5.2	1920	6.5	4.5
1911	3.8		1921	3.4	
1912	3.7		1922	3.5	
1913	7.6		1923	3.4	
1914	7.5		1924	5.6	
1915	6.2	4.6	1925	5.3	4.9
1916	3.8		1926	4.5	
1917	2.7		1927	4.6	
1918	2.0		1928	6.5	
1919	8.4		1929	3.6	

ZYMOTIC DISEASES.

395 deaths were caused by Zymotic Diseases during the year, equivalent to 6.1 per cent. of the total number of deaths registered from all causes, or a Zymotic death rate of 0.9 per 1,000 of the population. During the preceding year the deaths from Zymotic Diseases numbered 466, 8.0 per cent. of the total deaths, or a death rate of 1.1.

4, or 1.0 per cent. of the total deaths from Zymotic Diseases were caused by Typhoid Fever; 77 or 19.5 per cent. by Measles; 8 or 2.03 per cent. by Scarlet Fever; 138 or 34.9 per cent. by Whooping Cough; 19, or 4.8 per cent. by Diphtheria; and 149 or 37.7 per cent. by Diarrhœa.

The diseases from which the greatest number of deaths were registered were Diarrhœa, Whooping Cough and Measles, the figures being respectively 149, 138 and 77. The comparative figures for the preceding year were 196, 50 and 169 respectively.

TABLE No. 26

Shewing the annual Death Rate per 1,000 of the population from Zymotic Diseases during the twenty years 1910-1929; also the average rate for quinquennial periods.

Year.	Rate.		Year.	Rate.	
1910.	2.7	2.2	1920	1.5	1.1
1911	1.8		1921	1.4	
1912	1.7		1922	0.6	
1913	2.3		1923	1.2	
1914	2.7		1924	1.0	
1915	1.7	1.6	1925	1.3	1.1
1916	1.7		1926	1.3	
1917	1.1		1927	0.9	
1918	1.8		1928	1.1	
1919	1.5		1929	0.9	

TABLE No. 27

Shewing the number of deaths registered as having been caused by the principal Zymotic Diseases, also the annual rate of mortality per 10,000 of the population during the thirty-seven years 1893-1929:—

Year.	POPULATION.	Typhoid Fever		Typhus Fever		Smallpox		Scarlet Fever		Simple Contin'd Fever		Diphtheria		Whooping Cough		Measles		Diarrhoea	
		Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000	Number of Deaths.	Annual Rate per 10,000
1893	275,000	122	4.4	14	0.5	...	...	48	1.7	10	0.4	52	1.9	193	7.0	216	7.8	599	21.8
1894	285,000	145	5.1	4	0.1	...	...	38	1.3	21	0.7	66	2.3	190	6.7	452	15.8	197	6.9
1895	295,000	184	6.2	19	0.6	...	...	88	3.0	29	1.0	34	1.2	109	3.7	197	6.7	325	11.0
1896	300,000	136	4.5	4	0.1	...	...	173	5.8	19	0.6	47	1.6	215	7.2	205	6.8	206	6.9
1897	310,000	354	11.4	5	0.1	...	...	32	1.0	16	0.5	38	1.2	187	6.0	124	4.0	355	11.4
1898	340,000	640	18.8	1	0.03	...	...	21	0.6	22	0.6	87	2.6	109	3.2	54	1.6	356	10.5
1899	350,000	263	7.5	1	0.03	...	...	24	0.7	10	0.3	61	1.7	215	6.1	146	4.2	285	8.1
1900	359,000	261	7.3	2	0.05	...	...	14	0.4	8	0.2	54	1.5	115	3.2	42	1.2	241	6.7
1901	350,862	341	9.7	8	0.2	1	0.03	13	0.4	26	0.7	65	1.9	162	4.6	240	6.8	292	8.3
1902	360,000	169	4.7	3	0.08	1	0.03	15	0.4	12	0.3	66	1.8	208	5.8	349	9.7	204	5.7
1903	360,000	136	3.8	4	0.1	...	...	24	0.7	18	0.5	40	1.1	168	4.7	125	3.5	277	7.7
1904	360,000	111	3.1	6	0.2	8	0.2	21	0.6	8	0.2	28	0.8	260	7.2	196	5.4	251	7.0
1905	360,000	128	3.6	1	0.03	1	0.03	35	1.0	6	0.2	32	0.9	24	0.7	227	6.3	295	8.2
1906	366,220	90	2.5	3	0.08	...	...	26	0.7	9	0.2	41	1.1	331	9.0	29	0.8	376	10.3
1907	370,163	82	2.2	3	0.08	...	...	13	0.3	2	0.05	38	1.0	64	1.7	201	5.4	212	5.7
1908	380,344	57	1.5	10	0.26	...	...	4	0.1	2	0.05	33	0.9	137	3.6	186	4.9	260	6.8
1909	386,576	20	0.5	...	...	...	...	4	0.1	2	0.05	18	0.4	213	5.5	10	0.3	244	6.3
1910	391,167	18	0.5	1	0.03	...	...	18	0.5	5	0.1	27	0.7	259	6.6	504	12.9	241	6.2
1911	386,449	15	0.4	2	0.05	...	...	37	1.0	...	...	32	0.8	67	1.7	2	0.05	290	7.5
1912	391,974	17	0.4	2	0.05	...	...	48	1.2	...	...	37	0.9	217	5.5	171	4.4	159	4.1
1913	396,000	22	0.6	1	0.03	...	...	153	3.9	...	...	53	1.3	41	1.0	182	4.6	458	11.6
1914	399,000	26	0.7	11	0.3	...	...	168	4.2	...	...	31	0.8	205	5.1	205	5.1	457	11.5
1915	403,000	10	0.2	...	...	...	...	107	2.7	...	...	27	0.7	134	3.3	177	4.4	240	6.0
1916	390,000	19	0.5	4	0.1	...	...	52	1.3	...	...	28	0.7	120	3.1	191	4.9	236	6.1
1917	393,000	39	1.0	6	0.15	...	...	11	0.3	...	...	22	0.6	57	1.5	98	2.5	180	4.6
1918	393,000	25	0.6	3	0.08	...	...	12	0.3	...	...	30	0.8	317	8.1	111	2.8	205	5.2
1919	401,000	17	0.4	1	0.02	...	...	138	3.4	...	...	30	0.7	9	0.2	137	3.4	263	6.6
1920	413,000	34	0.8	9	0.2	...	...	94	2.3	...	...	45	1.1	84	2.0	132	3.2	223	5.4
1921	420,000	15	0.4	3	0.07	...	...	11	0.3	...	...	31	0.7	222	5.3	17	0.4	279	6.6
1922	425,000	7	0.2	...	...	...	...	12	0.3	...	...	43	1.0	16	0.4	33	0.8	152	3.6
1923	429,000	4	0.09	...	...	...	...	26	0.6	...	...	24	0.6	182	4.2	126	2.9	154	3.6
1924	434,000	3	0.07	...	...	...	...	57	1.3	...	...	23	0.5	89	2.0	83	1.9	166	3.8
1925	438,000	18	0.41	...	...	...	...	49	1.1	...	...	38	0.9	99	2.3	167	3.8	203	4.6
1926	416,000	6	0.1	...	...	...	...	12	0.3	...	...	44	1.1	46	1.1	132	3.2	287	6.9
1927	416,000	8	0.2	...	...	...	...	10	0.2	...	...	30	0.7	117	2.8	1	0.02	195	4.7
1928	415,151	13	0.3	1	0.02	...	...	21	0.5	...	...	16	0.4	50	1.2	169	4.1	196	4.7
1929	415,151	4	0.1	...	...	...	...	8	0.2	...	...	19	0.5	138	3.3	77	1.9	149	3.6

TABLE No. 28
 Showing by Registrar's Districts the number of cases of Infectious Diseases notified pursuant to the Infectious Disease
 (Notification) Act, 1889.

DISTRICT.	Typhus Fever	Typhoid Fever.	Scarlet Fever.	Simple Continued Fever.	Puerperal Fever.	Relapsing Fever.	Smallpox.	Diphtheria	Mem- branous Croup.	Erysipelas.	Cerebro- Spinal Meningitis.	Polio- myelitis.	Ence- phalitis Lethar- gica.	Ophthal- mia Neona- torum.	Total.
1 Dock	..	8	27	..	2	..	..	16	..	4	..	..	..	3	60
2 Duncairn	..	9	84	..	4	..	..	22	..	15	..	..	..	..	136
3 Shankill	..	4	104	2	1	..	..	60	..	16	2	..	..	6	195
4 Workhouse	..	13	64	..	1	..	..	67	..	27	4	..	1	1	178
5 Millfield	..	3	27	..	3	..	..	14	..	6	..	..	..	2	55
6 College	..	5	40	..	..	..	..	51	1	10	..	..	..	1	108
7 Greencastle	27	..	..	..	..	8	..	..	..	..	..	..	35
8 Ligoniel	..	1	25	..	..	..	..	11	..	3	..	..	1	..	41
9 Falls	..	7	32	..	..	..	..	52	..	4	..	..	..	3	98
10 Woodvale	..	3	56	..	2	..	..	35	..	3	..	..	..	1	100
11 Ravenhill	..	7	74	..	6	..	..	42	..	8	..	1	1	4	143
12 Ballymacarrett	..	3	71	..	1	..	..	32	..	7	..	1	..	9	123
13 Ballyhackamore	..	6	42	..	..	..	..	22	..	5	..	..	..	1	76
14 Ballymaghan
15 Central	..	4	16	..	3	..	..	36	..	9	2	..	1	..	71
16 Pottinger	..	3	32	..	..	..	..	16	..	5	1	..	1	15	73
Total	..	76	721	2	23	..	..	484	1	122	11	1	5	46	1,492

TABLE No. 29

Shewing by age periods and sexes the number of cases of Infectious Diseases notified pursuant to the Infectious Disease (Notification) Act, 1889.

DISEASE.	Under 1 year		1 year and under 2 years		2 years and under 5 years		5 years and under 10 years		10 years and under 15 years		15 years and under 20 years		20 years and under 25 years		25 years and under 45 years		45 years and under 65 years		65 years and upwards		Age Unknown.	Total No. Males.	Total No. Females.	Grand Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
Typhus Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever .....	...	...	...	...	2	6	3	6	5	5	3	8	7	5	6	12	2	3	1	...	2	29	47	76
Scarlet Fever	3	1	14	12	85	92	140	188	39	44	16	14	9	9	21	20	2	1	...	5	6	434	287	721
Simple Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	2
Puerperal Fever .....	...	...	...	...	...	...	...	...	...	...	...	2	...	7	...	14	...	...	...	...	...	...	23	23
Relapsing Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	7	8	15	11	60	58	84	113	21	34	8	15	3	17	3	18	1	3	...	3	2	205	279	484
Membranous Croup .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Erysipelas .....	...	2	2	...	1	...	...	...	...	1	3	2	2	1	6	11	13	15	4	6	35	49	73	122
Cerebro-Spinal Meningitis .....	...	1	...	1	3	2	1	2	...	...	1	...	...	...	...	...	...	...	...	...	...	5	6	11
Poliomyelitis .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Encephalitis Lethargica .....	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	1	...	...	1	...	5	5
Ophthalmia Neonatorum	26	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26	20	46
	36	32	31	24	152	158	229	309	65	85	31	42	21	39	37	77	18	23	5	6	46	751	741	1492

INFECTIOUS DISEASES.

NOTIFICATIONS.

TABLE No. 30

Shewing the number of cases of Infectious Diseases notified pursuant to the Infectious Disease (Notification) Act, 1889, as having occurred in each of the four quarters.

DISEASE.	Quarter Ended				TOTAL.
	30th March, 1929.	29th June, 1929.	28th Sept., 1929.	28th Dec., 1929.	
Typhus Fever	—	—	—	—	—
Typhoid Fever	18	27	21	10	76
Scarlet Fever	244	179	115	183	721
Simple Fever	—	—	2	—	2
Puerperal Fever	8	10	4	1	23
Relapsing Fever	—	—	—	—	—
Smallpox	—	—	—	—	—
Diphtheria	155	92	65	172	484
Membranous Croup	1	—	—	—	1
Erysipelas	23	20	20	59	122
Cerebro-Spinal Meningitis	5	2	1	3	11
Poliomyelitis	1	—	—	—	1
Encephalitis Lethargica	5	—	—	—	5
Ophthalmia Neonatorum	8	16	10	12	46
Total	468	346	238	440	1,492

CORRECTED DIAGNOSIS.

9 cases notified as typhoid fever; 35 as scarlet fever; 1 as simple continued fever; 42 as diphtheria; 1 as membranous croup; and 1 as cerebro-spinal meningitis, were found not suffering from the diseases notified. Of these 1 case notified as typhoid fever and 8 as diphtheria were found to be suffering from scarlet fever; 2 cases notified as scarlet fever and 1 as simple continued fever were found to be suffering from typhoid fever. The remainder were not suffering from any notifiable infectious disease.

TABLE No. 31
 Notifiable Diseases (other than Tuberculosis) during the year 1929.

Disease.	Total cases Notified.	Cases admitted to Hospital.	Total Deaths.
Typhus	—	—	—
Small Pox	—	—	—
Scarlet Fever	721	693	8
Diphtheria	484	467	19
Enteric Fever (including Paratyphoid)	76	72	4
Puerperal Fever	23	—	11
Puerperal Pyrexia	—	—	—
Pneumonia— (Acute Primary) (Acute Influenzal)	41*	—	362
Cerebro-Spinal Fever	11	11	—
Epidemic Encephalitis	5	1	—
Acute Poliomyelitis	1	—	—
Ophthalmia Neonatorum	46	—	—
Erysipelas	122	—	11

* Exclusive of Broncho Pneumonia.

DISINFECTING STATION, 1929.

Sir,

I beg to report that during the greater part of the year 1929 the Disinfecting Station has been in the hands of the Contractors.

Messrs. Thornbury Bros. are carrying out the work of extending each end of the building, and are installing four new slipper baths and four washhand basins.

Messrs. Swinson's, Ltd., have installed a new Steam Disinfecting Machine (Washington Lyon's type), supplied by Messrs. Manlove Alliott of Nottingham.

When this work is completed the Station will have a complement of 8 slipper baths, 4 washhand basins, and 2 Steam Disinfecting Machines.

In the early part of the year we got delivery of two new Ford Motor Vans to replace the two old Chambers' Vans which were worn out. These vans are used for the collection of Infected bedding and clothing, and the delivery of same after disinfection; they are also used for the delivery of Disinfectants for the Public Elementary Schools.

The work undertaken at the Disinfecting Station includes:—

The disinfection of bedding and clothing from houses where cases of Infectious Diseases have occurred.

The personal bathing and disinfection of the clothing of persons who have been in contact with Infectious Diseases, and whose business includes the handling of food-stuffs.

The delivery once per month of a quantity of disinfectants to each non-transferred Public Elementary School in the City.

The disinfection of clothing, etc., intended for export to the Irish Free State, for which service a small charge is made.

The cleansing of Emigrants who have failed to pass the United States Medical Inspector at the port, and the disinfection by steam or otherwise of all their baggage is also undertaken. For this service the various Shipping Companies are charged a fee of £10 for the use of the plant and staff on each occasion, plus a charge of 5/- per person dealt with.

We have also attached to the Disinfecting Station a Store where the various disinfectants are kept, and from where a supply of dilute disinfectants is given out to those poor persons who apply for same.

On pages 122-123 are two tables giving a summary of the various phases of the work done at the Disinfecting Station, and of the work done by the Motor Vans, also of the quantity of disinfectants dealt with, and the distribution of same from the Disinfectant Store during the year 1929.

I am, Sir,

Your obedient Servant,

STEWART A. NELSON.

Dr. C. S. Thomson,
Medical Superintendent Officer
of Health.

DISPENSARY DISTRICTS.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XL	XIII.	XV.	XVI.	TOTAL
Schools:—															
Inspections	169	292	359	154	151	143	44	25	115	121	225	68	126	55	2180
Common Lodging Houses:—															
Inspections—Day	1100	482	...	92	563	4	...	2	...	...	...	...	436	165	2844
" Night .....	...	2	...	...	3	...	2	...	...	...	...	...	...	...	7
Breaches of Bye-Laws	207	92	...	13	106	...	2	...	...	...	...	...	50	62	532
Nuisances	75	24	...	2	42	...	...	...	...	...	...	...	22	9	174
Under the Dairies, Cowsheds and Milkshops															
Order:—															
Cowsheds—															
Inspections .....	...	10	5	64	...	19	12	111	154	26	49	27	24	...	564
Breaches of Order .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milkshops—															
Inspections	244	741	423	499	180	308	13	51	246	338	552	380	260	263	4679
Breaches of Order .....	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2
Under the Bye-Laws for the Regulation of															
Offensive Trades:—															
Inspections	37	...	16	48	...	212	...	...	...	1	49	1	38	83	485
Breaches of Bye-Laws .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tipping Grounds:—															
Inspections	50	86	86	102	...	69	48	45	98	124	216	...	...	2	1040
Nuisances .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Black Smoke:—															
Observations made .....	...	...	...	3	8	...	...	3	12	10	...	1	...	3	44
Graveyards:—															
Inspections	1	42	2	48	...	61	14	...	18	13	...	10	...	...	221
Breaches of Burying Ground Regulations .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Marine Stores:—															
Inspections	139	84	29	...	63	19	...	...	...	...	...	...	59	...	393
Nuisances .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Public Urinals:—															
Inspections	760	142	191	241	144	266	37	180	209	151	78	23	76	65	2594
Nuisances .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Amusement Halls:—															
Inspections	456	194	37	172	140	4	...	...	...	...	51	25	49	46	1176
Nuisances .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rivers:—															
Inspections .....	...	24	...	1	10	1	14	7	25	30	12	...	10	...	149
Nuisances .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drain Tests:—															
Requests	1	6	4	2	...	4	...	...	...	...	1	2	1	...	26
Defective	1	4	4	2	...	1	...	...	...	...	...	2	...	...	16
New Work	6	6	1	2	2	...	1	...	1	...	...	2	1	...	27
Defective .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2
Typhoid Fever	4	9	3	7	4	6	...	2	1	4	6	1	3	3	56
Defective	2	4	...	2	1	2	...	...	...	...	3	...	1	1	17
Diphtheria	4	5	11	18	5	14	...	3	14	6	10	5	5	8	121
Defective	1	2	1	5	...	6	...	...	...	1	3	2	1	1	29
Continued Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Defective .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Others	15	79	43	9	2	11	...	1	35	1	17	...	11	18	275
Defective	3	47	26	4	1	8	...	...	26	...	8	6	5	12	160
Total No. of Tests	30	105	62	38	13	35	1	6	51	11	34	28	21	29	505
" Defects	7	58	31	13	2	17	...	...	27	1	14	18	7	14	224

SANITARY REPORT (continued).

DISPENSARY DISTRICTS.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XV.	XVI.	TOTAL
House Drains Cleansed	257	361	260	380	114	498	7	15	158	75	226	186	113	275	222	3147
" " Repaired	13	28	27	38	2	23	1	...	8	2	15	50	50	22	31	310
Pipe Drain Laid in Providing Houses with new Drains (in feet)	137	926	229	226	32	116	...	...	116	18	21	32	1141	259	...	3253
Gully and Disconnecting Traps put on House Drains	1	16	3	1	1	11	...	...	6	...	3	2	25	4	...	73
Houses had the Tiling, Paving, or Flooring Repaired	177	611	436	486	202	384	12	46	408	313	534	334	224	471	279	4917
Water Closets Erected .....	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	4
" " Repaired	219	463	342	328	217	254	7	22	381	226	335	245	167	405	235	3846
Ashbins Provided	89	254	190	150	69	221	13	9	109	94	178	134	125	92	86	1813
Houses Provided with New Sinks	2	13	1	...	...	...	...	...	...	...	...	...	...	...	...	16
Houses Provided with New Soil and Ventilation Pipes .....	...	...	...	...	...	...	...	...	3	...	1	1	1	...	...	6
Houses have had the Roofs Repaired	216	700	645	280	224	310	15	25	436	225	387	284	151	284	179	4361
Houses have had Spouting Repaired	111	436	312	201	179	212	12	27	272	183	330	182	125	169	149	2900
Houses have been Cleaned or Whitewashed	3	8	5	26	16	23	...	3	2	6	15	31	7	50	23	218
Houses have had the Yard Walls Limestone washed	13	77	...	...	...	...	16	...	...	...	...	...	...	...	...	106
Houses (that were overcrowded) had the Number of Inmates Reduced	6	7	5	1	1	3	...	...	2	...	3	3	...	3	3	37
Houses Closed	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2
Houses have had Minor Repairs Effected	553	1067	782	579	320	464	30	48	706	379	729	483	329	862	456	7787
Miscellaneous Nuisances Abated	79	112	167	134	23	183	1	2	39	63	164	111	151	239	112	1580

TABLE No. 33.

Showing Disposal of Disinfectants, etc., during the Year 1929.

Name of Disinfectant, etc.	Spraying Mosquito Grounds.	Disinfecting Houses.	Supplied to Public Elementary Schools.	Used for Drain Testing.	To City Hall.	To Carrick House.	To Police Office.	To Municipal Laboratory.	To Duncrue Tipping Ground.	re Influenza Epidemic.		* Diluted and given Grats to Poor Persons.	In Stock 1st January, 1929.	Received during the year.	In Stock 1st January, 1930.	Total Quantity used during the year.
Duncrue Fluid	—	—	102½ gals.	20½ gals.	10 gals.	—	—	—	—	—	—	169 gals.	5 gals.	360 gals.	63 gals.	302 gals.
Civic Fluid	—	—	144 "	40 "	50 "	30 gals.	—	—	5 gals.	—	—	128 "	37 "	360 "	—	397 "
Septol Fluid	—	50 gals.	—	—	2 "	—	2 gals.	1 gal.	—	—	—	43 "	34 "	80 "	16 "	98 "
Izal Fluid	—	7 "	—	—	—	—	—	—	—	1 gal.	6½ gals.	¾ gal.	16 "	20 "	21 gals.	15 "
Paraffin Oil	158 gals.	—	—	—	—	—	—	—	—	—	—	—	—	200 "	42 "	158 "
Formaldehyde	—	—	—	—	—	—	—	—	—	—	—	—	6 w.qts.	—	4 w.qts.	2 w.qts.
Sulphur Cakes	—	11 gross	—	—	—	—	—	—	—	—	—	—	1 gross	12	2 gross	11 gross

* The Number of Poor Persons who were supplied during the Year was 25,191.

TABLE No. 34.

Showing Summary of Work done at the Disinfecting Station ; also
Work done by the Motor Vans for the Year 1929.

re Motor Vans.					re Infectious Disease.					No. of Articles of Clothing for Export to the Irish Free State Disinfected.		Cleansing of Emigrants.			
Number of calls at Infectious Disease Houses.	Number of calls at P.E. Schools.	Total Number of miles ran.	Gallons of Motor Spirit used.	Average Miles per Gallon.	Total No. of Articles of Clothing, Bedding, etc. Disinfected	No. of Persons				Number of Public Library Books taken from I.D. Houses to owners.	No of Books from Private Libraries, disinfected, & returned to owners.	Number of Persons dealt with.	Number of Packages of Baggage.	Hours in Attendance	
						Bathed.		Sprayed						During Working Hours	Outside Working Hours
						M.	F.	M.	F.						
2,570	1,241	8,055	676	11.9	10,030	56	31	58	46	166	8	122	126	34	121

PURDYSBURN FEVER HOSPITAL.

To the Chairman and Members of the Public Health Committee.

GENTLEMEN,

I have the honour to present to you the following report on the working of Purdysburn Fever Hospital for the year 1929 (52 weeks ended 28th December, 1929).

1,473 cases were admitted during this period, there remained from the previous year 277 cases, making a total of 1,750 cases under treatment.

1,597 of these were treated to a conclusion, leaving 153 cases in hospital at the end of the year.

The number of admissions in the previous year had been 2,818, and the average number of admissions in the previous five years 2,279.

TABLE I.

Showing the classification of the cases, and the mortality in cases treated to a conclusion.

Disease.	Remain- ing on 1/1/29.	Admitted during year.	Total.	Remain- ing on 28/12/29.	Nett.	Died.	Mortality % calculated on cases treated to a conclusion.
Enteric—Typhoid ...	11	28	39	1	38	5	13.16
Enteric—Para A. ...	—	1	1	—	1	—	0.00
Enteric—Para B. ...	6	54	60	5	55	1	1.82
Typhus ...	—	—	—	—	—	—	—
Scarlatina ...	189	723	912	53	859	6	0.69
Diphtheria ...	65	474	539	87	452	12	2.65
Diphtheria Carrier ...	—	1	1	—	1	—	0.00
Cerebro-Spinal Fever... ..	—	12	12	—	12	3	25.00
Pneumonia ...	—	2	2	—	2	—	0.00
Tubercular Meningitis ...	1	2	3	—	3	1	33.33
Other Diseases ...	5	171	176	7	169	12	7.10
Quarantine ...	—	4	4	—	4	—	0.00
Epidemic Encephalitis ...	—	1	1	—	1	—	0.00
Acute Poliomyelitis ...	—	—	—	—	—	—	—
Smallpox ...	—	—	—	—	—	—	—
Total ...	277	1473	1750	153	1597	40	2.50
Comparative numbers							
1928 ...	261	2818	3079	277	2802	80	2.85

ENTERIC FEVER.

83 cases of Enteric were admitted during the year. These included 28 cases of Typhoid, 1 case of Paratyphoid A., and 54 cases of Paratyphoid B.

11 cases of Typhoid and 6 cases of Paratyphoid B. remained from the previous year, making a total of 39 cases of Typhoid, 1 case of Paratyphoid A., and 60 cases of Paratyphoid B. under treatment. At the end of the year 1 case of Typhoid and 5 cases of Paratyphoid B. remained over.

Thus 38 cases of Typhoid, 1 case of Paratyphoid A., and 55 cases of Paratyphoid B. were treated to a conclusion.

Total enterics 94, of whom 6 died; case mortality 6.38 per cent.

Of the 83 admissions 72 came from the city, and 11 from outside the city boundary.

In the previous year the admission numbered 180.

The average number of admissions in the previous five years was 131.

TABLE II.

Showing the case mortality in age periods in Typhoid (B. Typhosus).

Ages.				Cases.	Died.	Mortality per cent.
Under 5 years	.....	.....	.....	2	—	0.00
5—10	„	.....	.....	8	—	0.00
10—20	„	.....	.....	10	2	20.00
20—30	„	.....	.....	14	2	14.28
Over 30	„	.....	.....	4	1	25.00
Totals	.....	.....	.....	38	5	13.16

There was 1 case of Paratyphoid A. age 29 years, which made a good recovery.

TABLE III.

Showing the case mortality in age periods in Paratyphoid B.

Ages.				Cases.	Died.	Mortality per cent.
Under 5 years	.....	.....	.....	5	—	0.00
5—10	„	.....	.....	8	—	0.00
10—20	„	.....	.....	15	1	6.66
20—30	„	.....	.....	13	—	0.00
Over 30	„	.....	.....	14	—	0.00
Totals	.....	.....	.....	55	1	1.82

TABLE IV.

Showing the number of Enteric Fever Cases admitted in each month..

January	.....	.....	4	July	.....	.....	9
February	.....	.....	3	August	.....	.....	11
March	.....	.....	2	September	.....	.....	9
April	.....	.....	4	October	.....	.....	3
May	.....	.....	11	November	.....	.....	3
June	.....	.....	22	December	.....	.....	2
				Total	.....	.....	83

DIPHTHERIA.

474 cases were admitted during the year, making, with the 65 cases remaining from the previous year, 539 cases under treatment.

87 cases still remained in hospital at the end of the year.

452 cases were treated to a conclusion with 12 deaths, giving a case mortality of 2.65 per cent.

4 cases died between 12 and 24 hours of admission, and 3 between 24 and 48 hours.

Of the 474 admissions 411 came from the city, and 63 from outside the city boundary.

In the previous year the admissions numbered 592.

The average number of admissions in the previous five years was 438.

TABLE V.

Showing case mortality in age periods.

Ages.				Cases.	Died.	Mortality per cent.
Under 1 year	.....	.....	.....	7	2	28.57
1—2 years	.....	.....	.....	18	1	5.55
2—5	„	.....	.....	108	1	0.93
5—10	„	.....	.....	188	6	3.19
10—20	„	.....	.....	84	2	2.38
20—30	„	.....	.....	30	—	0.00
Over 30	„	.....	.....	17	—	0.00
Totals	.....	.....	.....	452	12	2.65

LARYNGEAL DIPHTHERIA.

40 cases required operative interference for Laryngeal Obstruction.

TABLE VI.

Showing results in age periods in cases in which intubation of the Larynx was performed.

Ages.				Cases.	Died.	Mortality per cent.
Under 1 year	.....	.....	.....	3	1	33.33
1—2 years	.....	.....	.....	7	2	28.57
2—3	„	.....	.....	6	—	0.00
3—4	„	.....	.....	6	—	0.00
4—5	„	.....	.....	6	1	16.66
Over 5	„	.....	.....	12	3	25.00
Totals	.....	.....	.....	40	7	17.50

DIPHTHERIA “CARRIER.”

1 Diphtheria “Carrier” was admitted during the year, the purulent discharge from left ear containing virulent Diphtheria Bacilli.

On discharge from hospital the organisms were still present, but were avirulent.

CEREBRO-SPINAL FEVER.

12 cases of Cerebro-Spinal Fever were admitted during the year, of which 2 came from outside the city boundary.

No cases remained from the previous year, so that 12 cases were treated to a conclusion. Of these 3 died, giving a mortality rate of 25.00 per cent.

These 3 fatal cases were all very late in coming under treatment.

TUBERCULAR MENINGITIS.

2 cases of Tubercular Meningitis were admitted during the year, which, with 1 case remaining over from the previous year, makes a total of 3 cases under treatment.

One of these ended fatally, giving a mortality rate of 33.33 per cent.

Of the 2 cases discharged, 1 died shortly afterwards, while the other made a good recovery.

ACUTE POLIOMYELITIS.

No cases of Acute Poliomyelitis were admitted during the year.

PNEUMONIA.

2 cases of Pneumonia were admitted during the year, both recovered.

EPIDEMIC ENCEPHALITIS.

There was 1 admission of Epidemic Encephalitis during the year.
This case was discharged, showing signs of Parkinsonism.

TYPHUS FEVER.

No cases of Typhus Fever were admitted during the year.

SCARLATINA.

723 cases were admitted during the year, making, with 189 cases remaining over from the previous year, a total of 912 under treatment.

53 cases still remained in hospital at the end of the year, so that 859 cases were treated to a conclusion during the year.

6 of these ended fatally, giving a case mortality of 0.69 per cent.

Of the 723 admissions 70 came from outside the city boundary and 653 from the city.

In the previous year 1,791 cases were admitted.

The average number of admissions in the previous five years was 1,465.

TABLE VII.

Showing the case mortality in age periods.

Ages.				Cases.	Died.	Mortality per cent.
Under 1 year	.....	.....	.....	9	0	0.00
1—2 years	.....	.....	.....	30	0	0.00
2—5	„	.....	.....	214	2	0.93
5—10	„	.....	.....	382	2	0.52
10—20	„	.....	.....	146	0	0.00
20—30	„	.....	.....	43	1	2.32
Over 30	„	.....	.....	35	1	2.86
Totals	.....	.....	.....	859	6	0.69

3 cases died within 24 hours of admission.

Fatal Cases of Scarlatina:—

- 1 child, age 2 years, admitted on 3rd day of illness, died from Scarlatina and Burns on legs, received 8 days before admitted to hospital. This child was only 6 hours in hospital.
- 1 man, age 25 years, admitted on 4th day of illness, died of Toxæmia on the 6th day. This was a very Toxic case.
- 1 woman, age 60 years, admitted on 5th day of illness, died of Cardiac Failure on the 6th day. This woman had Exophthalmic Goitre and had been under treatment for this and allied Cardiac condition at home. She was 17½ hours in hospital.
- 1 child, age 2 years, admitted on 2nd day of illness, died on 40th day from Sepsis.
- 1 child, age 6 years, admitted on 2nd day of illness, died on the 2nd day. This child was 1½ hours in hospital. This was a very Toxic case.
- 1 child, age 7 years, admitted on 6th day of illness, died on the 7th day from Scarlatina and Acute Appendicitis with abscess formation. This child was only 20½ hours in hospital.

"RETURN CASES."

In 21 instances the return home of a patient from hospital was followed by other cases in the house, giving a return case rate of 2.46 per cent. On the average these 21 cases had reached the 37th day from the onset of the disease when they were discharged.

OTHER DISEASES.

171 cases of "Other Diseases" were admitted during the year. These included cases admitted for observation and which did not develop any of the ordinary infectious diseases, and also members of the staff who became ill from causes other than infectious diseases, and who were warded in the Isolation Pavilion for convenience of nursing.

5 cases remained from the previous year, and 7 remained at the end of this year, so that the number of cases treated to a conclusion was 169.

Of these 11 died, giving a case mortality of 7.10 per cent.

The causes of these deaths were as follows:—

Broncho-Pneumonia 5, Acute Gastro-Enteritis 1, Bronchitis 1, Pneumococcal Meningitis 1, Cerebral Tumour and Meningitis 1, Influenzal Meningitis 1, Burns 1, Measles 1.

INFECTIOUS DISEASES AMONGST THE STAFF.

1 Nurse contracted Diphtheria. She made a good recovery.

The Staff at the end of the year consisted of:—

1 Medical Superintendent.	1 Foreman Gardener.
1 Resident Medical Officer.	3 Groundsmen.
1 House Physician.	1 Matron.
1 Steward.	1 Assistant Matron.
1 Clerk.	1 Night Superintendent.
1 Storekeeper.	1 do. do. (Joint).
1 Engineer.	1 Housekeeper.
2 General Mechanics.	10 Ward Sisters.
3 Motor Drivers.	24 Nurses.
1 Van Man.	1 Seamstress.
4 Firemen.	1 Head Laundress.
1 Pumping Station Engine Man.	6 Laundry Maids.
5 Day Porters.	1 Cook.
1 Gate Porter.	2 Kitchen Maids.
1 Night Porter.	4 General Maids.
1 Disinfecter.	8 Ward Maids.

Throughout the year the staff have discharged their responsible duties very satisfactorily.

I am,

Gentlemen,

Your obedient Servant,

A. GARDNER ROBB,

Visiting Physician in Charge.

CITY BACTERIOLOGICAL LABORATORY,
QUEEN'S UNIVERSITY,
BELFAST.

28th May, 1930.

Dear Sir,

I beg to present the report of the work carried out in the laboratory during the year 1929.

The number of specimens submitted for examination was 11,037, as compared with 12,799 in the previous year, and 10,741 in 1927. This is a decrease of 1,726. There are two reasons for this decrease, firstly, the fact that the city was singularly free from Infectious Disease during the year, and secondly the new laboratory of the Belfast Union Infirmary now performs all the examinations for that Hospital.

A summary of the work done is as follows:—

INFECTIOUS DISEASES.									
DIPHTHERIA—									
Throat Swabs	...	...	...	...	3,981				
Nasal Swabs	...	...	...	...	513				
Direct Examinations	...	...	...	...	208				
Virulence Tests	...	...	...	...	67				
VINCENT'S ANGINA	...	...	...	...				4,769	
									'47
ENTERIC GROUP—									
Agglutination Tests	...	...	...	...	606				
Faeces, Blood, Urine, etc.	...	...	...	...	56				
								662	
TYPHUS—									
Weil-Felix Reaction	...	...	...	...				6	
MENINGITIS—									
Cerebro-Spinal Fluids	...	...	...	...				151	
TUBERCULOSIS—									
Sputa	...	...	...	...	544				
Pus	...	...	...	...	32				
Urine	...	...	...	...	89				
Pleural Fluids	...	...	...	...	31				
C. S. Fluids	...	...	...	...	50				
Faeces	...	...	...	...	6				
								752	
SCARLATINA—									
Swabs	...	...	...	...				1	
VENEREAL DISEASES.									
Wasserman Reactions	...	...	...	...	1,671				
Microscopical Examinations	...	...	...	...	211				
								1,882	
PATHOLOGICAL SPECIMENS.									
Tumours, etc.	...	...	...	...				109	
RINGWORM.									
Hairs for Spores, etc.	...	...	...	...				41	
PLAGUE.									
Rats (Mus Norvegicus)	...	...	...	...				213	
MILK EXAMINATIONS.									
Fresh Milk	...	...	...	...	522				
Pasteurised Milk	...	...	...	...	16				
Examinations for B. Tuberculosis	...	...	...	...	642				
								1,180	
WATER AND FOODSTUFFS.									
Water	...	...	...	...	4				
Ice Cream	...	...	...	...	39				
Shell Fish	...	...	...	...	3				
								46	
VACCINES.									
Autogenous	...	...	...	...	82				
Tuberculins	...	...	...	...	8				
Stock	...	...	...	...	5				
								95	
UNCLASSIFIED EXAMINATIONS.									
Urines, etc.	...	...	...	...				1,083	
Grand Total	...	...	...	...				11,037	

In the following tables a more detailed consideration is given to each of the above groups.

TABLE I.
Swabs examined for Diphtheria.

Month.	Throat Swabs.	Positive	Neg.	Nasal Swabs.	Pos.	Neg.	From Doctors.	From Hosps.	School Med. Ser.	Total
Jan.	359	125	234	41	18	23	108	284	8	400
Feb.	332	124	208	36	15	21	81	277	10	368
Mar.	318	101	217	28	9	19	74	257	15	346
April	300	88	212	38	14	24	88	241	9	338
May	350	99	251	34	16	18	101	250	33	384
June	216	49	167	11	2	9	67	143	17	227
July	202	54	148	1	0	1	68	135	0	203
Aug.	157	40	117	1	0	1	37	104	7	158
Sept.	307	62	245	8	1	7	88	197	30	315
Oct.	462	111	351	63	19	44	113	286	126	525
Nov.	458	137	321	119	19	100	109	239	229	577
Dec.	520	176	344	133	18	115	190	283	180	653
Total	3981	1166	2815	513	131	382	1134	2696	664	4494

208 Swabs were examined by the direct method for Diphtheria. Of these 21 were returned positive.

67 Virulence Tests were performed, of which 41 were positive.

47 Swabs were examined for Vincent's Angina; in 17 of these the casual organisms were present.

TABLE II.
Blood from suspected Enteric Group Infections.

Month	Positive			Negative			From Doctors.	From Hospitals.	Total.
	T	A	B	T	A	B			
January ...	2	0	3	15	17	14	5	12	17
February ...	1	0	1	8	9	8	5	4	9
March ...	2	0	2	11	13	11	7	6	13
April ...	5	0	2	10	15	13	7	8	15
May ...	0	1	2	17	16	15	11	6	17
June ...	6	0	14	19	25	11	14	11	25
July ...	3	0	7	24	27	20	12	15	27
August ...	7	0	5	26	33	28	15	18	33
September ...	2	0	2	16	18	16	10	8	18
October ...	0	0	4	13	13	9	4	9	13
November ...	2	0	0	4	6	6	2	4	6
December ...	0	0	0	9	9	9	3	6	9
Total ...	30	1	42	172	201	160	95	107	202

Of the 73 positive reactions, 30 were positive to Typhoid, 42 to Paratyphoid B, and 1 to Paratyphoid A.

Wilson-Felix-Weil tests were done on 6 samples of blood, all of which were negative.

5 samples of blood were tested against the Dysentery Group and all of these were negative.

TABLE III.
Examinations of Cerebrospinal Fluids.

Month.	B. Tuberculosis.		Meningocci.		Other Organisms.		Cell Count.	Total.
	Positive	Negative.	Positive	Negative.	Positive	Negative.		
January ...	0	4	2	0	0	0	6	12
February ...	0	6	6	3	0	0	4	19
March ...	1	2	5	3	0	0	3	14
April ...	0	4	5	1	0	0	4	14
May ...	1	7	10	4	0	0	8	30
June ...	0	4	2	2	0	0	4	12
July ...	0	3	0	0	0	0	3	6
August ...	0	3	0	0	0	0	3	6
September ...	0	3	3	2	0	0	3	11
October ...	0	2	5	3	2	0	2	14
November ...	0	0	1	4	0	0	0	5
December ...	0	4	0	0	0	0	4	8
Total ...	2	42	39	22	2	0	44	151

The two Cerebrospinal Fluids, which contained other organisms, both gave pure cultures of Pfeiffer's Bacillus.

TABLE IV.
Examination of Sputa for B. Tuberculosis, etc.

Source.			Positive.	Negative.	Total.
Hospitals	...	...	4	10	14
General Practitioners	...	...	97	433	530
Total	...	...	101	443	544

74 Specimens of Sputa were examined for organisms other than B. Tuberculosis.

Ringworm.

41 Specimens of hairs were submitted for examination; of these 22 were infected with the small spored fungus.

TABLE V.

Examinations carried out under the Venereal Diseases Scheme.
The number of specimens submitted during the year was 1,882.

Source of Specimens.

	Blood.	Smears.
Co. Borough of Belfast	1,647	209
Co. Antrim	5	1
Co. Down	10	0
Co. Armagh	3	0
Co. Tyrone	3	0
Co. Fermanagh	2	0
Co. Derry	1	0
Co. Monaghan	0	1

The specimens may be grouped as follows: —

Detection of Treponemata	2
Detection of Gonococci	209
Wassermann Reactions (Blood).	1,661
Wassermann Reactions (C.S.F.).	10

WASSERMANN REACTIONS.
(Method M.R.C. No. 1).

Stage of Syphilis indicated by Clinical Report.	No. of Tests.	No. Positive.	No. Negative.
Primary ...	48	16	32
Secondary, Untreated ...	82	29	53
Secondary, Treated ...	12	4	8
Tertiary ...	655	111	544
Latent, Untreated ...	384	57	327
Latent, Treated ...	112	54	58
Congenital ...	290	40	250
Particulars not stated ...	78	20	58
	<u>1661</u>	<u>331</u>	<u>1330</u>

49 Specimens of blood were taken from patients referred to the Laboratory by General Practitioners.

BACTERIOLOGICAL EXAMINATIONS OF MILK.

During the year 1,180 examinations were made. 522 of these were specimens of fresh milk. 16 were of pasteurised milk and 104 were examined specially for B. Tuberculosis.

TABLE VI.

This table shows the number and classification per month.

Month.	Pasteurised Milk.	Fresh Milk.	Specially examined for B. Tuberculosis.	Total.
January ...	2	50	0	52
February ...	0	44	8	52
March ...	2	43	1	46
April ...	2	42	0	44
May ...	0	44	10	54
June ...	9	39	6	54
July ...	0	42	8	50
August ...	1	37	8	46
September ...	0	33	11	44
October ...	0	58	18	76
November ...	0	45	11	56
December ...	0	45	23	68
	<u>16</u>	<u>522</u>	<u>104</u>	<u>642</u>

TABLE VII.

This table shows the source of the specimens of milk.

Month.	Street.	Milkshop.	Railway.	Other Sources	Total.
January ...	39	13	0	0	52
February ...	18	18	8	0	44
March ...	28	16	0	1	45
April ...	23	18	3	0	44
May ...	28	12	4	0	44
June ...	22	26	0	0	48
July ...	33	9	0	0	42
August ...	23	13	2	0	38
September ...	28	4	0	1	33
October ...	49	9	0	0	58
November ...	27	13	4	1	45
December ...	22	12	2	9	45
	<u>340</u>	<u>163</u>	<u>23</u>	<u>12</u>	<u>538</u>

Of 538 specimens of milk, 186 contained lactose fermenting organisms in 1/100cc., i.e., 36.75%.

22 specimens (4.3%) showed more than 200,000 organisms per cc.

SPECIAL EXAMINATION OF MILK FOR B. TUBERCULOSIS.

642 examinations for B. Tuberculosis were made; 538 of these were done by the direct method and 104 by the biological method. Of these latter, 6 were infected with live B. Tuberculosis. This gives a percentage of 5.77, an increase of .67% on the figures of last year.

TABLE VIII.

Miscellaneous Examinations.

Urine Examinations, Microscopical	.....	.....	230
Urine Examinations, Chemical	.....	.....	124
Urine Examinations, Bacteriological	.....	.....	381
Pus	.....	.....	191
Pathological Fluids	.....	.....	31
Fæces	.....	.....	6
Blood Cultures	.....	.....	18
Blood Films and Counts	.....	.....	28
Sputum, other than T.B.	.....	.....	74
			<hr/> 1,083

I am, Sir,

Your obedient Servant,

GEO. F. W. TINSDALE,
City Bacteriologist.

To Dr. Thomson, M.S.O.H.,
City Hall, Belfast.

PORT SANITARY AUTHORITY OF BELFAST.

Report for the year 1929 by the Port Medical Officer, Dr. Charles S. Thomson, M.D., Ch.B., D.P.H. (Hons.), B.Hy. (Hons.), F.R.S.I. F.R.I.P.H., F.I.H.

The Corporation of Belfast, as the Sanitary Authority, was permanently constituted the Port Sanitary Authority for the Port of Belfast, by the Local Government Board (Ireland) Provisional Orders Confirmation (No 4) Act, 1900.

The jurisdiction of the Port Sanitary Authority extends to all that part of the said port of Belfast which lies on the landward side of a straight line drawn from Blackhead, in the Larne Rural District, to Orlock Point, in the Newtownards Rural District, together with the waters of the said Port of Belfast, within such limits, and all docks, basins, harbours, creeks, rivers, channels, bays and streams within the aforesaid limits, and the place or places which may from time to time be appointed as the Customs Boarding Station or Stations for such part of the said Port, and the place or places for the time being appointed for the mooring or anchoring of ships for such part of the said port under any regulations for the prevention of the spread of diseases issued under the Authority of the statutes in that behalf and for the purposes of any regulations as aforesaid shall also extend to any ship which in pursuance thereof or of any directions given thereunder may be moored or anchored at the place appointed thereunder as aforesaid or which may be on its way thither.

The expenses of the Port Sanitary Authority are contributed by the Urban and Rural Sanitary Authorities in the following proportions.

The Corporation of Belfast	.....	.....	92 per cent.
The Carrickfergus Urban District Council	.....	.....	1 per cent.
The Holywood Urban District Council	.....	.....	1 per cent.
The Bangor Borough District Council	.....	.....	1 per cent.
The Belfast No. 1 Rural District Council	.....	.....	1½ per cent.
The Belfast No. 2 Rural District Council	.....	.....	1½ per cent.
The Larne Rural District Council	.....	.....	1 per cent.
The Newtownards Rural District Council	.....	.....	1 per cent.

It will thus be seen that the area of the port is extensive, the boundary line on the County Antrim shore being twelve miles from Belfast, whilst on the County Down shore it is fourteen miles from Belfast.

The Port of Belfast trades with a very large number of British Commonwealth and Foreign Ports. During the year vessels arrived from the following ports:—

Alexandria 2, Antwerp 61, Amsterdam 8, Albany 1, Astoria 1, Archangel 3, Abelis 1, Brest 1, Boulogne 3, Ballina, 3, Bona 4, Batum 1, Bellingham 1, Buenos Ayres 4, Baltimore 5, Bayonne 1, Bordeaux 2, Buranna 1, Bilbao 1, Bremen 4, Bergen 2, Cyjon 1, Cork 3, Copenhagen 2, Corcubean 1, Campbelltown 2, Durban 1, Dundalk 2, Dublin 9, Dunkirk 22, Dillfzyl 1, Drogheda 1, Fredreckstadt 1, Gothenburg 25, Ghent 49, Geelong 1, Genoa 2, Galway 5, Hamburg 44, Havre 5, Huelva 2, Hecca Cove 1, Hernasand 1, Haagshamm 1, Kemi 2, Kroonstadt 1, Kotka 2, La Pallice 2, Limerick 2, Larvik 1, Leghorn 2, Lisbon 1, Montreal 9, Mobile 2, Miramichi 1, Malaga 3, Masance 1, New York 21, New Orleans 17, Nova Scotia 1, Odessa 1, Port Lincoln 2, Portland 0.8, Picton 3, Passbo 1, Pasanes 1, Pomeran 1, Pomerang 1, Pernau 1, Patras 1, Rotterdam 41, Rosario 26, Rangoon 1, Rouen 7, Riga 18, Raumo 1, San Pedro 2, St. John's 10, Sante Fe 1, San Nicolas 3, Sundsvall 4, Stockholm 1, Sligo 5, Skein 2, Sfax 2, Seattle 2, San Francisco 1, Trones 1, Tacoma 1, Trondhyn 1, Tringsund 1, Uleaborg 2, Valencia 6, Waterford 5, Vigo 1, Vancouver 1, Villa Constitution 1, Walleroo 1, Westport 2, Xphelia 1.

The Nationality of the vessels which arrived was as follows:—American 42, British 1,470, Danish 21, Dutch 52, Finnish 2, French 1, German 30, Greek 11, Italian 3, Latvaine 1, Norwegian 18, Spanish 3, Swedish 9.

Table A shows the amount of shipping entering the port.

TABLE A.

				Number Inspected		Number reported defective.	Number on which defects were remedied.
		Number.	Tonnage.	By Medical Officer.	By Sanitary Inspector.		
Foreign—							
Steamers	}	...	492	636,805	32	494	193
Motors		...	2	—	—	—	—
Sailing		...	—	—	—	—	—
Fishing		...	—	—	—	—	—
Total Foreign		...	494	636,805	32	494	193
Coastwise—							
Steamers		...	7,132	2,542,330	1	1,169	349
Motors		...	14	—	—	—	—
Sailing		...	—	—	—	—	—
Fishing		...	—	—	—	—	—
Total Coastwise		...	7,146	2,542,330	1	1,169	349
Total Foreign and Coastwise		...	7,640	3,179,135	33	1,663	542
Non-trading—							
Sailing	}	...	2	98,592	This includes tugs and small craft-pleasure boats.		
		...					
Steamers		...	147				
*Not included in totals.							

II. Character of Trade of Port.

TABLE B.

(a) Passenger Traffic during the year.

No. of Passengers.	1st Class.	2nd Class.	3rd Class.	Transmigrants.
Inwards	4,129 (all classes)	
Outwards	13,929 do.	

These figures do not include Cross-Channel services.

The countries from which passengers principally arrive are:—United States of America and Canada. Passengers from Europe, etc., come through English and Scottish ports, which maintain a nightly service with Belfast from Ardrossan, Glasgow, Heysham, and Liverpool.

(b) Cargo Traffic.

Principal Imports: Maize, wheat, timber, flax, ores, pulp, paper, cement, hemp, iron and steel, slates, artificial manures, oils, flour, tobacco (leaf), glass, fruits and vegetables (preserved).

Principal Exports: Machinery, ropes, linens, yarns, flax, grass seed, butter, soap, aerated waters.

Countries with which port principally trades: Germany, Holland, Denmark, Sweden, Norway, Latvia, France, Spain, Italy, Belgium, Greece, Egypt, United States of America, South America, Australia.

III. Source of Water Supply.

All water used in the docks and supplied to vessels in dock is obtained from hydrants on the quays. The water is supplied by the Belfast City and District Water Commissioners. There are no water boats at the port.

IV. Infectious Disease.

Vessels entering the port are hailed by officers of H.M. Customs at the boarding station. If they obtain information of sickness on board a report is sent to the Port Medical Officer. Vessels from "infected" ports or vessels on which infectious disease exists at the time of arrival, or has occurred during the voyage, are boarded by the Port Medical Officer or Assistant Port Medical Officer.

All vessels in dock are visited by the Port Sanitary Officer as soon as possible after docking, who enquires into the occurrence of any sickness during the voyage, and, if necessary, communicates with the Port Medical Officer.

Notifications of the arrival, or expected arrival, of vessels with sickness on board, or vessels requiring special attention, are received from H.M. Customs or the Shipping Companies' Agents. (The Agents frequently receive the information by wireless).

All infectious cases are removed by ambulance to Purdysburn Fever Hospital or the Belfast Union Fever Hospital. (Smallpox cases to the Smallpox Hospital, Purdysburn).

Contacts of infectious cases, if not removed to hospital and living at addresses in the city, are kept under observation by the City Sanitary Inspectors. If proceeding to an address outside the city the Medical Officer of Health of the district concerned is notified. The "crew" contacts are visited daily by the Port Sanitary Officer during their stay in port.

The disinfection of the vessel, after the removal of an infectious case, is carried out by the Port Sanitary Officer. The infected quarters are sprayed with 4½ per cent. formalin; the clothing, bedding, etc., are removed to the Disinfecting Station for steam disinfection.

Arrangements for Cleansing of Persons.

The cleansing of persons is carried out at the Disinfecting Station, Lagan-bank Road.

Arrangements for Ambulance Transport.

The motor ambulances attached to Purdysburn Fever Hospital or the Union Fever Hospital are available for infectious cases. The motor ambulances of the Belfast Corporation are available for non-infectious cases.

Arrangements for detection and treatment of Venereal Disease amongst Sailors.

Enquiries as to the existence of V.D. are made by the Port Sanitary Officer and leaflets showing the facilities provided in the city for treatment of these diseases are distributed to the masters of the vessels. Treatment at the various V.D. Clinics is free of cost to the patient.

Arrangements for bacteriological examination of rats.

The bacteriological examination of rats from the port is carried out by the City Bacteriologist at the Municipal Laboratory, Queen's University.

During the year 199 rats were examined for possible plague infection; none were found to be infected.

All other bacteriological examinations for the Port Sanitary Authority are done by the City Bacteriologist.

TABLE C.

Cases of Infectious Sickness landed from Vessels.

Disease.		Number of cases during the year.	Average number of cases for previous 5 years.
Malaria	.....	7	Nil.
Chicken Pox	.....	3	do.
Tuberculosis	.....	1	do.
Typhoid	.....	1	do.
Pneumonia	.....	1	do.
		— 13	

TABLE D.

Cases of Infectious Sickness occurring on Vessels during the voyage,
but disposed of prior to arrival.

Disease.		Number of cases during the year.	Average number of cases for previous 5 years.
Influenza	.....	12	Nil.
Malaria	.....	6	do.
Pneumonia	.....	1	do.
		— 19	

No case of plague, cholera, yellow fever, smallpox, or typhus occurred, and no plague infected rats were discovered during 1929.

Smallpox Contacts: 8 smallpox contacts were notified from Liverpool and Glasgow; these were contacts of cases of the disease which occurred on board the ss. "Tuscania." This vessel sailed from Bombay on 14th March; the ports of call were Suez, Port Said, Marseilles, Gibraltar, Liverpool and Glasgow. 450 passengers were landed at Marseilles on 27th March; the remaining passengers landed at Liverpool on 1st April, and at Glasgow on 4th April. The 8 contacts who came to Belfast had been vaccinated prior to their arrival, and all were kept under observation for the quarantine period. None developed Smallpox.

A wireless message was received informing the Port Sanitary Authority that a case of Smallpox had occurred on board the "Laurentic"—the vessel was on her way to New York and had left Liverpool on the previous day, the 23rd May. The vessel arrived in Belfast Lough on 24th May, when she was boarded by the Assistant Port Medical Officer who diagnosed the case (a Finn) as chickenpox. This diagnosis was confirmed when the case was sent to Purdysburn Fever Hospital.

Malaria: 7 cases of malaria were removed to Hospital from the ss. "Wyn-acre." This vessel arrived in Belfast port on 12th October, with a cargo of wheat from River Plate. She had called at Dakar, West Africa, on 26th September. On arrival at Belfast, the Port Medical Officer examined two of the crew who were ill, and, during the ensuing four days, four further members of the crew sickened and were removed to Hospital suffering from malaria.

Measures against Rodents.

Steps taken for detection of rodent plague: (a) In ships in the port. All vessels arriving from ports where plague is endemic, are boarded as soon as possible after berthing, by the Port Sanitary Officer. Careful enquiries are

made as to any evidence of illness or deaths among rats on board. The vessels are examined to determine the probable rat population on board, and also to examine for sick or dead rats. Traps are set with a view to obtaining samples of the rat population and all rats so obtained are sent to the Municipal Laboratory for examination by the City Bacteriologist. (b) On quays, wharves, warehouses, etc. Instructions are given to owners and employees on quays and warehouses that rats caught by trapping or otherwise should be preserved in air-tight tins for the Port Sanitary Officer, who arranges that the rats should be sent to the City Bacteriologist for examination.

Measures taken to prevent passage of rats between ships and the shore:

Rat guards are affixed to the moorings of all vessels from all ports except coastwise vessels. These guards are used continuously during the stay of the vessels in port. If the rat population on board is estimated to be above the normal all gangways must be lifted at night.

Methods of Deratisation of Ships.

Deratisation of ships is carried out by fumigation with either Sulphur Dioxide or Hydrocyanic Acid Gas. The fumigations are usually carried out by private firms under the supervision of the Port Sanitary Officer. In the fumigation by sulphur the requisite amounts of sulphur are placed in the holds and spaces in the vessel to be fumigated; 3 lbs. of sulphur per 1,000 cubic feet of air space and not more than 7 lbs. of sulphur to each bucket. The sulphur dioxide gas is generated by setting the sulphur alight. Wood shaving and paraffin mixed with the sulphur ensure its complete combustion. The minimum time of exposure is six hours.

Fumigation with hydrocyanic acid: Two vessels were fumigated with cyanide during the year. The fumigations were carried out by a Liverpool firm under the supervision of the Port Sanitary Officer. "Zyklon B" was used and gave very satisfactory results; 50 grammes of the "Zyklon B" per 1,000 cubic feet was used. The vessels were exposed to the poison gas for six hours, and every precaution was taken to ensure that no gas remained in the holds, etc., after the fumigation, by thorough ventilation, using electric fans.

Methods of Deratisation of Premises in the vicinity of Docks or Quays.

This is undertaken by the Shipping Companies, warehousemen, and occupiers of premises, at the request of the City Sanitary Officers or the Port Sanitary Officer. If necessary, notices under the Rats and Mice Destruction Act are served upon the occupiers of the premises. Cats are kept in many of the stores and warehouses; trapping is also done but poison baits are seldom used.

Rat Proofing:—Wharves and Warehouses.—Nearly all the wharves on the County Antrim shore of the port are of rat proof construction. The roadways and pavings of the sheds are square-setted on concrete. The wharves on the County Down shore are mostly used for the discharge of coal and iron and are not rat proof.

The offices and huts in the goods sheds are raised 18 inches above the floor and constructed so as to be free from rat harbourage.

Action taken to extend rat proofing: The Sanitary Inspectors see that all stores are kept clean, and, where necessary, the owners may be called upon to construct the flooring, etc., of concrete to prevent the harbourage of rats. It has not been found necessary to call for any structural alterations for the purpose of rat proofing during the year, as the owners or occupiers of buildings in the vicinity of the docks are fully alive to their responsibility in the matter.

TABLE G.

Particulars relating to Plague "infected" or "suspected" Vessels arriving in 1929.

Name of Vessel.	Date of Arrival.	Whether infected or suspected.	Methods of rat destruction.	Number of dead rats recovered.	Whether a Certificate of Deratisation issued.	Remarks.
S.S. "Procyon" ...	8/4/29	Suspected.	Fumigated by S.O.2.	30	Yes.	—
S.S. "Dubhe" ...	9/4/29	do.	do.	18	do.	—
S.S. "A. D. Bordes"	2/8/29	do.	—	None.	No.	Due fumigation. Proceeding to Dunkirk. Letter sent to Port Medical Officer, Dunkirk.
S.S. "Rose den" ...	28/9/29	do.	Had Deratisation Certificate.	do.	No.	—
S.S. "Wynacre" ...	14/10/29	do.	do.	do.	No.	Proceeded to Cardiff for survey and extensive repairs. Port Medical Officer, Cardiff, notified by letter.

TABLE H.

Measures of rat destruction on vessels from Plague infected ports arriving in the port during 1929, and number of Certificates issued in respect of such vessels.

Total number of vessels arriving from Plague infected ports.	Number of such vessels fumigated with S.O.2.	Number of rats killed.	Number fumigated by H.C.N.	Number of rats killed.	Number of vessels on which trapping, poisoning, etc., were employed.	Number of rats killed.	Number of vessels measures of destruction were not carried out.	Number of Fumigation Certificates issued.	Number of other Certificates issued.
36	4	99	None.	None.	None.	None.	32	4	3
									—

TABLE I.

Measures of rat destruction on vessels (other than those included in Tables G. and H., and number of Certificates issued in respect of such vessels during 1929.

Number of vessels fumigated by S.O.2.	Number of dead rats recovered.	Number of vessels fumigated by H.C.N.	Number of dead rats recovered.	Number of vessels on which trapping, poisoning, etc., were employed.	Number of dead rats recovered.	Number of Certificates issued on Form Port II.	Number of other Certificates issued.
8	71	1	12	3	17	Deratisation. 9 Exemption. 6	None.

VI. Hygiene of Crews' Spaces.

TABLE J.

Classification of Nuisances.

Nationality of Vessel	Number inspected during 1929	Defects of original construction.	Structural defects through wear and tear.	Dirt, vermin and other conditions prejudicial to health.
British	1,470	—	6	515
Other Nations	293	—	—	75

VII. Food Inspection.

The most important foodstuffs imported consist of fruit—apples, pears, tomatoes; dried fruit—currants, raisins, prunes; and vegetables—lettuce, cauliflower and broccoli.

During the year the following articles were seized as unsound and unfit for food.

	Tons.	Cwts.	Qrs.	Lbs.
70 crates of Dutch lettuce.....	—	12	—	—
2 sides of bacon	—	—	3	—
223 Barrels of pears	3	19	2	4
18 do.	—	6	1	5
8 boxes of fish fillets	—	1	—	—
30 barrels of pears	—	10	2	6
40 do.	—	14	1	—
43 trays of tomatoes (Dutch)	—	12	1	18
18 boxes of tomatoes (Canary Islands)	—	10	—	—
	7	6	3	5

One sample of raspberry pulp was examined for the presence of preservatives, by the City Analyst, with negative results.

It is essential that a fully qualified Meat and Food Inspector should be appointed for duty entirely at the Port.

TUBERCULOSIS DEPARTMENT.

REPORT

OF THE

Chief Tuberculosis Officer.

MEMBERS OF THE TUBERCULOSIS COMMITTEE (1929).

The Right Honourable SIR WILLIAM COATES, Bart., P.C., D.L., J.P.
Lord Mayor.

Councillor CAPTAIN D. C. LINDSAY (Chairman).

Alderman Mrs. McMORDIE, C.B.E., J.P.
Lady of Grace of St. John of Jerusalem (Deputy Chairman).

Alderman ALEXANDER.	Councillor H. M'LAURIN, J.P.
Alderman CAPTAIN W. REID, J.P.	Councillor CLARKE SCOTT.
Alderman J. D. WILLIAMSON, M.D., J.P.	Councillor W. SWEENEY.
Councillor W. A. COCHRANE, J.P.	MR. WILLIAM MOOREHEAD
Councillor W. F. CLOKEY.	(Chairman Belfast Insurance Committee).
Councillor S. GRAY.	MR. KYLE M. ALEXANDER, F.L.A.A.
Councillor J. GRIMLEY.	(Member Belfast Insurance Committee).
Councillor Lt.-Com. R. M. HARCOURT.	MR. JAMES PARKHILL, J.P.
Councillor H. M'ALEVEY.	(Member Belfast Insurance Committee).
Councillor H. M'KIBBIN.	

MEDICAL OFFICERS OF THE DEPARTMENT.

Tuberculosis Institutes.

Chief Tuberculosis Officer	.....	DR. ANDREW TRIMBLE.
Assistant Medical Officer	.....	DR. JAMES SHAW.
Assistant Medical Officer	.....	DR. T. R. V. IRWIN.
Assistant Medical Officer	.....	DR. HERBERT M'MASTER.
Assistant Medical Officer	.....	DR. E. P. DEWAR.

Municipal Sanatorium, Whiteabbey.

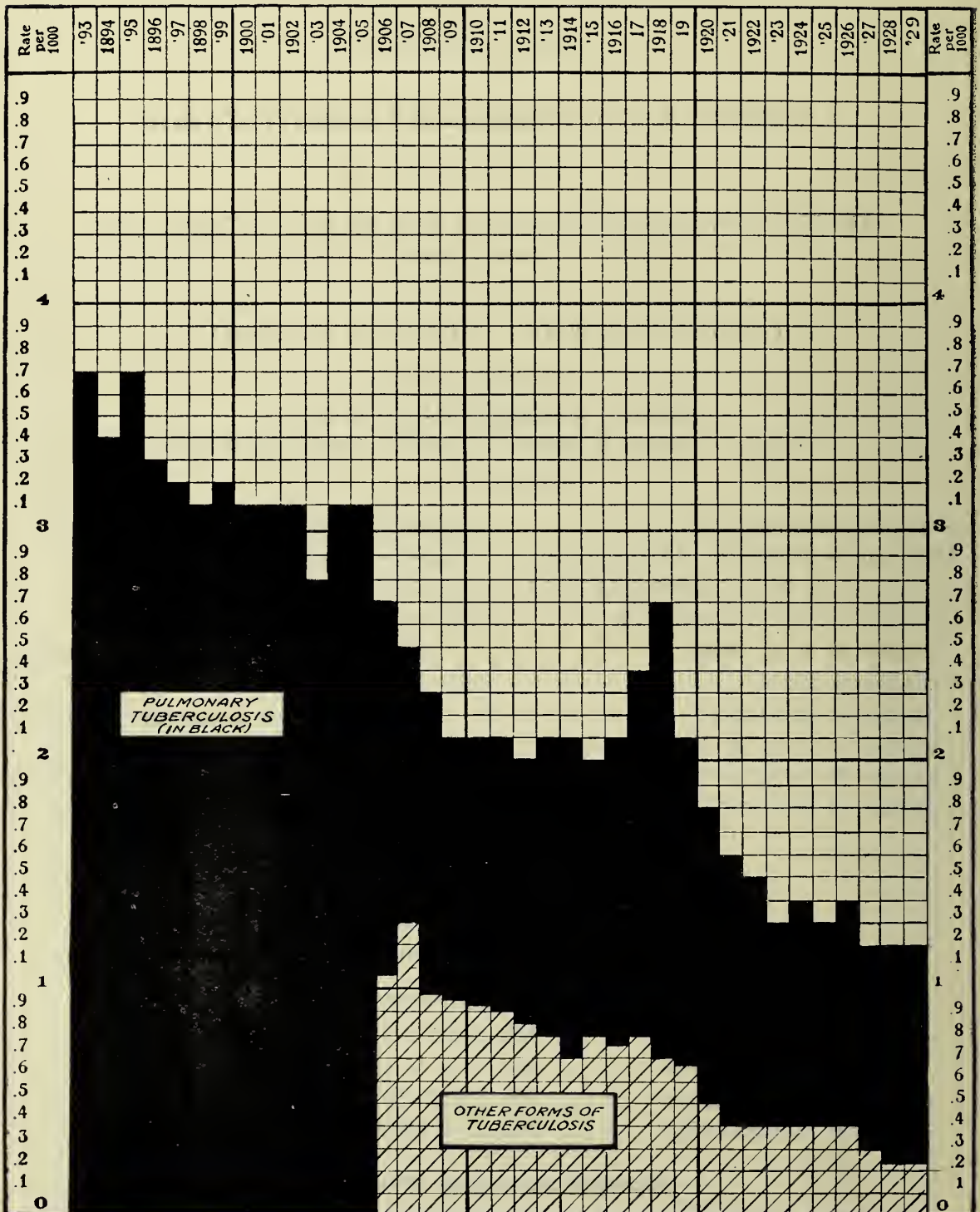
Resident Medical Superintendent.....	DR. PERCY S. WALKER.
Assistant Medical Officers	..... DR. D. K. WATTERSON.
	DR. MARGARET H. ELLIOTT.
Visiting Medical Officer	..... DR. JOHN RANKIN.

Municipal Hospital for Tuberculous Children, Graymount.

Visiting Surgeon	MR. H. P. MALCOLM.
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CHART 1.

SHOWING THE COURSE OF THE DEATH RATE FROM PULMONARY TUBERCULOSIS
IN BELFAST FROM 1893 ONWARD, AND FROM THE NON-PULMONARY FORMS OF
TUBERCULOSIS, FROM 1906 ONWARD.



REPORT OF THE CHIEF TUBERCULOSIS OFFICER
ON THE WORK OF
THE TUBERCULOSIS DEPARTMENT
For the Year ending 31st December, 1929.

To the Chairman and Members of the Tuberculosis Committee.

Gentlemen,

I beg to submit herewith my report of the work done in connection with the Tuberculosis Institutes during the year ended 31st December, 1929.

My first duty is to thank the Tuberculosis Committee for the continued interest and sympathetic support which they have given me in carrying through the work of the Department; and the Medical, Nursing and Clerical Staffs for their loyal assistance throughout the year.

On the 1st March, 1929, the new Medical Superintendent Officer of Health, Dr. Charles S. Thomson, took up duty and assumed control of all sections of public health activity in the city. During the year he has been proceeding with the scheme of re-organization adumbrated by the terms of his appointment, which imposed upon him the responsibility for the carrying out of the various public health services, including tuberculosis. This has necessitated an important and, I believe, useful re-organization of the Tuberculosis Department, bringing it into closer relationship with public health work generally. Most sincerely do I thank the Medical Superintendent Officer of Health for his help and encouragement, and for the gracious manner in which he has effected the co-ordination of the work of this Department with that of the Public Health Department.

CALCULATION OF RATES.

Throughout this report the rates are calculated on the census figures for the year 1926—the population for the year 1929 not being “estimated” as formerly. Any inaccuracy arising from the calculation of rates based on the census figures of 1926 is, however, negligible, since the census will now be taken every five years, and the rates will be corrected in the year 1931. In the meantime, the figures on which our rates are based are 195,539 males and 218,612 females; total population 415,151.

NEW EXAMINATIONS.

Table 1.—Shows the number of persons examined for the first time, in each of the years indicated, without regard to sex or diagnosis.

Year ended	Number of Examinations
31st December, 1927	2086
31st December 1928	1816
31st December, 1929	1805

Table 2.—Shows the result of examination of the new patients examined during the years indicated.

Year ended	Tuberculous	Suspect	Non-Tuberculous	Total
31st December, 1927	1152	119	957	2228
31st December, 1928	1100	117	745	1962
31st December, 1929	1032	117	770	*1919
Percentages for year ended 31st December, 1929	54%	6%	40%	100%

*Includes 114 transfers from patients formerly only suspect, to tuberculous or non-tuberculous.

The figures set out above show a decrease of 68 in the numbers found to be suffering from tuberculosis, as compared with the year 1928.

CONTACTS.

Table 3.—Shows the number and result of examination of Contacts set out as Tuberculous, "Suspect," and Non-Tuberculous.

	Tuberculous	Suspect	Non-Tuberculous	Total
No.	170	30	344	544
Per Cent.	31%	6%	63%	100%

With reference to the percentage of contacts found to be tuberculous, it is necessary to state that almost all the contacts examined had been previously noticed to be ailing, either by the parent or by the visiting nurse.

SPECIFIC FORMS OF TUBERCULOSIS.

Table 4.—Shows the form of tuberculosis from which each tuberculous patient was found to be suffering, and the sex of the patient so suffering, including old patients formerly "suspect," whose diagnosis was made definite during the year.

Year ended	Pulmonary		Glandular		Osseous		Abdominal		Other Forms		Total		Grand Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
31st Dec., 1927	355	423	118	110	33	30	28	26	15	14	549	603	1152
31st Dec., 1928	351	401	119	103	34	21	25	20	13	13	542	558	1100
31st Dec., 1929	344	390	79	46	34	37	28	28	26	20	511	521	1032

A study of the relative numbers of women and men found to be tuberculous at their first examination reveals a steady diminution in the relative numbers of women during the 16 years of our work. Thus for every 100 men found to be suffering from tuberculosis in the year 1916 we had 135 women similarly affected; but for every 100 men diagnosed as suffering from tuberculosis during 1929 we had only 102 tuberculous women.

RE-ATTENDANCES OF OLD PATIENTS.

The re-attendances of old patients at the Institutes for examination and treatment numbered 32,449, as compared with 32,869 in the year previous.

167 patients unable to attend the Institutes were re-examined in their own homes, and 73 patients were examined at the Belfast Infirmary by the Medical Staff of the Institutes.

RE-EXAMINATION OF PATIENTS ON DOMICILIARY TREATMENT.

In addition to the quarterly reports of Domiciliary Doctors regarding the patients under their care, a special re-examination of patients on Domiciliary treatment is made at regular intervals by the medical staff of the Institutes. During the year 1929, 921 such re-examinations were made, with the results set out hereunder:—

Table 5.—Shows the Condition of Domiciliary patients re-examined during the year.

Year	Disease Apparently Cured.	Disease Quiescent.	Greatly Improved.	Improved	In Statu Quo.	Worse.	Total.
1927	150	167	88	169	320	78	972
1928	79	110	69	168	455	82	963
1929	51	75	64	156	483	92	921

If these results can be accomplished in face of all the disabilities connected with overcrowding, inadequate housing and unemployment, much more might be accomplished if social conditions were what they should be; if the importance of attention to early symptoms were realised; and if the patient faithfully and courageously carried out the instructions of the doctor in regard to rest in the early stages of the disease.

PATIENTS ON THE VARIOUS FORMS OF TREATMENT.

Table 6.—Shows the number of patients on the different forms of treatment at the 31st of December, 1929.

Institute (Dispensary)	Domiciliary	Institutional		Open-Air School (Day Section)	Total
		Sana- torium.	Graymount Hospital		
1875	2702	225	56	114	4972

The importance of these figures does not consist merely in the fact that so many patients are under treatment, but that every patient treated is an object lesson to the remainder of the family and the community—serving as a starting point for a spread of the knowledge of the laws of health and of the means for the prevention of disease.

Table 7.

Occupations of Tuberculous Patients at their First Examination (arranged according to the Classification—Slightly Modified—of the Registrar-General).

I.—GENERAL OR LOCAL GOVERNMENT OF THE COUNTRY.

Male.
Nil.

Female.
Nil.

II.—PERSONS ENGAGED IN THE DEFENCE OF THE COUNTRY.

Policeman	.....	1	Nil.
Sailor (Discharged)	.....	5	
Soldier (Discharged)	.....	58	

III.—PERSONS ENGAGED IN PROFESSIONAL OCCUPATIONS (AND THEIR SUBORDINATES).

Male.		Female.	
Musician	..... 2	Violinist	..... 1

IV.—PERSONS ENGAGED IN DOMESTIC OR PERSONAL OFFICES OR SERVICES.

Bath Attendant	..... 1	Charwoman	..... 8
Hairdresser	..... 4	General Servant	..... 14
Hospital Attendant	..... 1		
Theatre Attendant	..... 1		

V.—PERSONS ENGAGED IN COMMERCIAL OCCUPATIONS.

Agent	..... 1	Chemist's Assistant	..... 1
Clerk	..... 15	Clerk	..... 4
Gas Inspector	..... 3	Shop Girl	..... 7
Pawnbroker	..... 2		
Shop Assistant	..... 10		
Traveller	..... 1		

VI.—CONVEYANCE OF MEN, GOODS, MESSAGES.

Carter	..... 5	Messenger	..... 1
Chauffeur	..... 3		
Engine Driver	..... 1		
Messenger	..... 4		
Motor Man	..... 7		
Porter	..... 1		
Tram Conductor	..... 1		
Van Man	..... 4		

VII.—PERSONS ENGAGED IN AGRICULTURE.

Nil. Nil.

VIII.—PERSONS ENGAGED ABOUT ANIMALS.

Nil. Nil.

IX.—PERSONS WORKING OR DEALING IN PRINTING, BOOKS, ETC.

Bookbinder	..... 2	Bookfolder	..... 2
Compositor	..... 1	Printing Machine Feeder	..... 2
Printer	..... 2		
Paper Cutter	..... 2		

X.—PERSONS ENGAGED WITH MACHINES AND IMPLEMENTS.

Blacksmith	..... 2	Cager	..... 1
Boiler Coverer	..... 1		
Cooper	..... 1		
Crane Driver	..... 1		
Driller	..... 3		
Engineer	..... 14		
Fireman	..... 2		
Heater Boy	..... 1		
Heckle Setter	..... 1		
Hoist Boy	..... 1		
Holder Up	..... 1		
Iron Turner	..... 4		
Oiler	..... 2		
Plater	..... 2		
Plumber	..... 2		
Red Leader	..... 1		
Riveter	..... 1		
Roller Boy	..... 1		
Sheet Metal Worker	..... 1		
Stager	..... 1		
Steel Pipe Coverer	..... 3		
Watchmaker	..... 2		
Wire Worker	..... 1		

XI.—PERSONS WORKING AT HOUSES, FURNITURE AND DECORATIONS.

Male.		Female.	
Basket Maker	..... 3	Polisher	..... 1
Bricklayer	..... 3		
Cabinet Maker	..... 4		
Carpenter	..... 3		
Draughtsman	..... 2		
French Polisher	..... 1		
Painter and Glazier	..... 1		
Slater	..... 2		
Stone Mason	..... 1		

XII.—CARRIAGES AND HARNESS.

Harness Maker 1	Nil.
---------------	---------	------

XIII.—SHIPS AND BOATS.

(See also under X.—“Machines and Implements.”)

XIV.—CHEMICALS AND COMPOUNDS.

Nil.	Nil.
------	------

XV.—TOBACCO AND PIPES.

Nil.	Tobacco Worker 5
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XVI.—FOOD AND LODGINGS.

Baker 3	Baker 1
Barman 2	Barmaid 1
Bottler 1	Biscuit Ornamentor 1
Bread Server	..... 1	Shop Girl (Fruit Shop)	..... 1
Butcher	..... 1	Waitress	..... 3
Dairy Worker	..... 2		
Fish Frier	..... 1		
Grocer	..... 1		
Waiter	..... 1		

XVII.—TEXTILE FABRICS.

Cloth Finisher	..... 1	Backminder	..... 2
Fluter	..... 1	Carder	..... 3
Linen Lapper	..... 5	Doffer	..... 11
Machine Boy	..... 3	Drawer	..... 6
Machinist	..... 2	Embroiderer	..... 2
Millworker	..... 2	Examiner	..... 1
Packer	..... 3	Fancy Box Maker	..... 2
Packing Case Maker	..... 1	Felt Machine Feeder	..... 1
Preparing Master	..... 1	Folder	..... 1
Rougher	..... 1	Hooker	..... 2
Tenter	..... 1	Laundress	..... 17
Warehouse Worker	..... 1	Layer	..... 3
		Ornamentor	..... 3
		Packer	..... 3
		Piercer	..... 1
		Presser	..... 4
		Reeler	..... 12
		Rover	..... 5
		Spinner	..... 23
		Stitcher	..... 46
		Thread Drawer	..... 3
		Twister	..... 1
		Wareroom Worker	..... 5
		Warper	..... 1
		Weaver	..... 37
		Winder	..... 14
		Factory Worker or Mill-worker (not otherwise defined)	..... 6

XVIII.—DRESS, ETC.

Boot and Shoe Maker	..... 3	Cutter	..... 3
Tailor	..... 3	Dressmaker	..... 1
		Tailoress	..... 1

XIX., XX., and XXI.—ANIMAL, VEGETABLE, AND MINERAL SUBSTANCES.

Male.

Nil.

Female.

Nil.

XXII.—GENERAL OR UNSPECIFIED COMMODITIES.

Caretaker	.....	1	Dealer	.....	1
Chimney Sweep	.....	1	Housewife	.....	72
Dealer	.....	1			
Labourer	.....	104			
Nightwatchman	.....	1			
Storeman	.....	2			
Timekeeper	.....	1			

XXIII.—REFUSE MATTERS.

Nil.

Bottle, Rag and Waste Sorter 4

XXIV.—PERSONS NOT PRODUCING.

School Boy	.....	131	School Girl	.....	118
Male Child under School Age	.....	63	Female Child under School Age	.....	30
No occupation	.....	14	No occupation	.....	22
Total Males	.....	566	Total Females	.....	521

N.B.—55 Discharged Sailors and Soldiers are recorded also under their ordinary calling.

THE QUESTION OF INFECTION.

Table 8.—Shows the possibility of infection by living, or having lived, with other tuberculous persons.

Year ended	Number of Patients who are living, or have lived, with on or more definitely tuberculous persons.							Total
	With 1	With 2	With 3	With 4	With 5	With 6	With over 6	
31st Dec., 1927	208	65	30	6	1	2	—	312
31st Dec., 1928	250	71	17	4	4	0	1	347
31st Dec., 1929	219	82	24	12	0	0	1	338

The possibility of infection is strongly suggested by a study of the foregoing Table. Thus, of 1,032 patients examined during the year and found to be suffering from tuberculosis, 33 per cent. had a definite opportunity of infection by living in contact with other tuberculous patients.

Here I would again emphasise the fact that the primary source of infection in tuberculosis is the tubercle bacillus in the sputum or other discharge of the tuberculous patient. If this sputum or discharge is not carefully disposed of, or if proper care is not taken to cleanse thoroughly the knives, forks, plates, spoons, etc., used by the tuberculous patient, the results are certain to be disastrous—especially to the children of the family.

VISITING THE PATIENTS IN THEIR HOMES.

During the year our Staff of Visiting Nurses paid 36,470 visits to patients in their own homes. This number included *2,699 visits to babies born in the homes of tuberculous patients.

From the 1st April, 1918, the Maternity and Child Welfare visiting work in the homes of tuberculous patients was carried out by the Tuberculosis Health Visitors, but since the 10th May, 1929, this work has been undertaken by the Health Visitors of the Maternity and Child Welfare Section of the Public Health Department.

* Discontinued 10/5/29.

As demonstrating the crowded conditions in which some of our patients live, the following Tables will be of interest:—

HOME CONDITIONS.

Table 9.—Shows the number of rooms in domiciles occupied by tuberculous patients at their first examination.

Year Ended	Rooms in Domicile	One	Two	Three	Four	Five	Six	Seven	Over Seven	Total
31st Dec., 1927	Patients	40	60	134	467	66	43	8	3	821
31st Dec., 1928		40	75	183	518	78	36	6	-	936
31st Dec., 1929		38	69	144	419	60	51	12	7	800

HOME CONDITIONS AT THE FIRST VISIT OF THE NURSE.

Table 10.—Shows the conditions of the homes of the new patients examined during the year, on the first visit of the Nurse.

Year ended	Excep. Good	Very Good	Good	Average	Bad	Very Bad	Excep. Bad	Total
31st Dec., 1927	3	16	106	552	103	30	11	821
31st Dec., 1928	0	21	111	614	112	62	16	936
31st Dec., 1929	6	17	107	493	106	50	21	800

The decision as to which of the above headings the condition of the home shall be placed under, has been arrived at after careful consideration of the number of inmates in the house, its cleanliness, ventilation, etc. The fact that only 16 per cent. of the home conditions reported upon could be classified under the heading of "Good" is a striking commentary upon the association of tuberculosis with poor home conditions.

PERSONS IN THE SAME BEDROOM AS THE PATIENT.

Table 11.—Shows the number of tuberculous patients sleeping in the **same bedroom** with the undermentioned numbers of other persons, as ascertained at the first visit of the nurse.

Year ended	Alone	With 1 other	With 2 others	With 3 others	With 4 others	With 5 others	With 6 others	With 7 others or over	Total
31st Dec., 1927	149	284	217	97	46	21	5	2	821
31st Dec., 1928	160	299	220	157	59	24	12	5	936
31st Dec. 1929	165	264	185	110	42	15	8	11	800

PERSONS IN THE SAME BED WITH THE PATIENT.

Table 12.—Shows the number of tuberculous patients sleeping in the **same bed** with the undermentioned numbers of other persons, as ascertained at the first visit of the nurse.

Year ended	Alone	With 1 other	With 2 others	With 3 others	With 4 others	With 5 others or over	Total
31st Dec., 1927	200	362	203	43	9	4	821
31st Dec., 1928	243	405	202	67	16	3	936
31st Dec., 1929	228	342	161	54	13	2	800

Allowance must be made, of course, for inadequate housing accommodation, for short time and unemployment, but it is regrettable that so many as 572 (or 71%) out of the 800 patients definitely diagnosed as tuberculous should have to share their bedrooms and beds with other members of their families.

SPITTING.

The spread of infection within the house is bad enough, and sometimes inevitable, but there is no excuse for the offensive habit of spitting in streets and public conveyances, where it is liable to be dried and carried into the air or conveyed by the feet of the passers-by into the homes of the people.

It should be recognised that spitting is a habit which offends against the most elementary standard of cleanliness, decency and good manners.

WHERE THE PATIENTS LIVE.

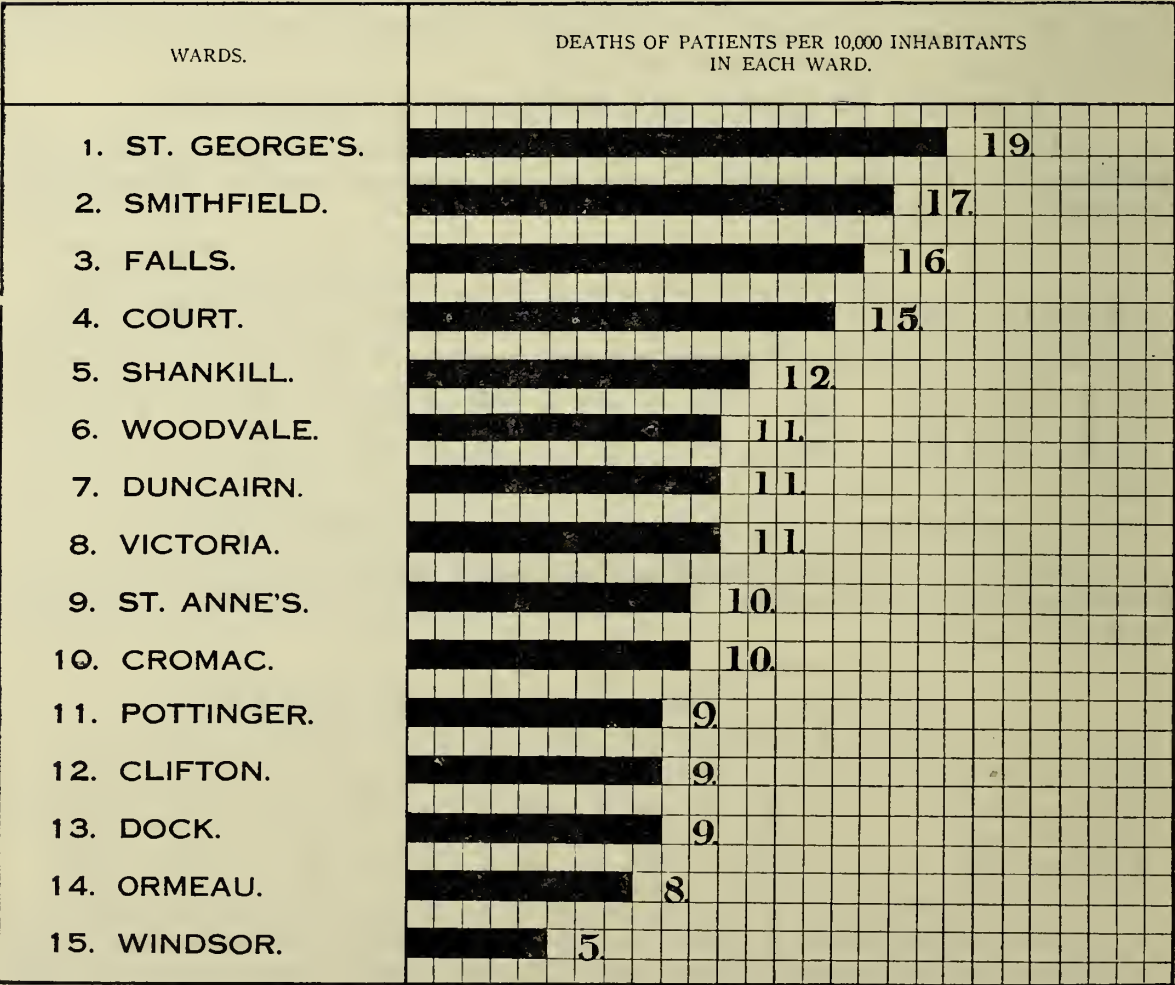
Table 13.—Indicates by wards, arranged in alphabetical order, the localities in which new tuberculous patients lived, at the time of their first examination.

Clifton	71	St. George's	68
Court	75	Shankill	94
Cromac	57	Smithfield	51
Dock	54	Victoria	84
Duncairn	64	Windsor	35
Falls	82	Woodvale	62
Ormeau	89		
Pottinger	97	Total	1032
St. Annes	46		

With this Table showing the localities in which the **patients live**, or were living at their first examination, it is interesting to compare the accompanying Chart, which sets out graphically the wards in which **deaths** from pulmonary tuberculosis took place during the year 1929.

CHART 2.

SHOWS THE DEATHS FROM PULMONARY TUBERCULOSIS AS A RATE PER 10,000 INHABITANTS, LIVING IN THE WARDS IN WHICH THE DEATH OCCURRED (1929).



X-RAY DEPARTMENT.

During the year we exposed 190 X-ray films, of which 140 were exposed as a help towards diagnosis of disease in the lungs, and 50 in connection with the work at the Municipal Hospital for Tuberculous Children, Graymount.

ARTIFICIAL LIGHT DEPARTMENT.

At both Institutes the use of artificial light has been further developed during the year with good results, especially amongst delicate children, and those suffering from osseous tuberculosis, lupus, etc.

Table 14.—Shows the number of Light Treatments administered during the year:—

Institute.	Treatments Given.				Total
	Carbon Arc	Mercury Vapour	Kromayer	Sollux	
Central	1044	104	27	175	1350
A.B. Road	—	1632	—	—	1632
	1044	1736	27	175	2982

DENTAL DEPARTMENT.

This Department under the supervision of Mr. Osborne Black, continues to be increasingly patronised, and patients derive much benefit from the dental treatment provided.

Table 15.—Shows the nature and amount of the dental work carried out for patients during the year ended 31st December, 1929.

Institute	Fillings	Scalings	Dressings	Extractions	Total Treatments
Central	101	11	116	213	441
A. B. Road	194	3	290	207	694
Graymount	250	0	366	76	692
Total	545	14	772	496	1827

BACTERIOLOGICAL WORK.

Table 16.—Shows the nature and amount of the bacteriological work done during the years indicated.

Year ended	Examinations.			Tuberculin prepared
	Sputa	Chemical	Haematological	
31st Dec., 1929	861	893	—	63

Table 17.—Shows the result of examinations of sputa for tubercle bacilli and albumen or albumose.

T.B. + Alb. +	T.B. + Alb. —	T.B. — Alb. —	T.B. — Alb. +
133	12	612	104

A consideration of the foregoing Table shows how rarely is albumin found to be absent when the sputum contains tubercle bacilli, and how constant is the presence of albumin in sputum positive to T.B. In all probability the presence of albumin is due to cytolysis, and if the tubercular lesion is active, it is reasonable to expect albumin in the sputum. It would seem, therefore, that the presence of albumin in sputum negative to tubercle bacilli should be regarded as a significant suggestion for frequent examination of the sputum, in order to avoid the risk of missing the intermittent presence of tubercle bacilli.

NEW METHODS OF TREATMENT.

Following the observation which I made in my last year's report that we are in need of more scientific methods of control of treatment, I undertook a series of treatments by tuberculin, carefully controlled and regulated by observations of the blood of the patients undergoing treatment, mainly by sedimentation tests and analysis of the blood picture. This ensures a scientific control of the tuberculin administration, and enables one to measure and space the dosage, and to estimate the progress of the patient independently of his own opinion, which is often untrustworthy. These tests have now run into several hundreds, and although it is as yet too early to judge as to final results, so far I am of opinion that the additional time and trouble necessary are fully justified.

I treated a few patients by hypodermic injections of a high concentration of Vitamin D. (preparation Y.) as supplied by Messrs. Lever Brothers, Ltd., to Professor Mellanby. I regret, however, that up to the present, I have not seen the phenomenal improvements reported by Professor Mellanby in his series of cases of puerperal septicaemia treated by this method. Such dramatic results could not, of course, be expected in a disease like tuberculosis, which is of a long and chronic duration.

Benzyl Cinnamic Ester, about which hopes were very high, was also tried without any very striking results.

Dermotubin, and Pondorf's Tuberculin were also tested, but it is too early to come to a definite conclusion as to their specific value in treatment.

PREGNANCY AND TUBERCULOSIS.

I have continued to build up statistics on this subject, and—speaking generally—I see no reason to depart from the opinion that pregnancy does not seem to affect appreciably the course of tuberculosis, unless the patient is in an advanced stage of the disease. The same conclusion has been reached by an observer working for the statistical service of the National Tuberculosis Association of America. He finds that “pregnancy apparently had no appreciable bearing upon the progress of tuberculosis. However, the time with respect to the pregnancy at which the patient was diagnosed as having tuberculosis seemed to have a most important bearing upon the results—the earlier the diagnosis the less the danger to the mother.”

The Tables in my previous annual reports are brought up to date, and set out as follows:—

Table 18.—Is an analysis of the end results of pregnancy in 1869 tuberculous mothers.

	Miscarried	Delivered of Living Child at Full Term	Delivered of Dead-born Child at Full Term	Total
No.	210	2422	68	2700
Per Cent.	8%	90%	2%	100%

With regard to the children born of tuberculous mothers: we have kept records of the condition of 696 children born of 291 tuberculous mothers. All these children were born since the mothers were diagnosed as tuberculous, and the reports as to their health at the end of the year 1929 were as follows:

Table 19.—Shows the condition of 696 children born of 291 tuberculous mothers:—

Healthy	Delicate	Tuberculous	Dead	Total
512	47	11	126	696

MUNICIPAL SANATORIUM.

For a detailed account of the work at the Municipal Sanatorium, Whiteabbey, reference should be made to the Report of the Resident Medical Superintendent, Dr. P. S. Walkker.

GRAYMOUNT HOSPITAL.

For details of the work carried on at this Institution reference should be made to the Report of the Visiting Surgeon, Mr. H. P. Malcolm.

GRAYMOUNT OPEN-AIR SCHOOL.

The Open-Air School divided into Day and Hospital Sections, under the supervision of Miss Thompson and her three assistants, continues to fulfil a most important function.

I think it well to make it plain that the children attending the open-air school (day section) are not themselves actually suffering from clinical tuberculosis, though they are living in daily association with parents or relatives suffering from the disease, and it is hoped that the good food, fresh air, mid-day rest, and general training in habits of cleanliness will go far to cut down the bridges to infection in the home, and to increase bodily resistance to the disease.

The average daily attendance at the School during the year was as under:—

Day Section	.....	.....	.....	88.2
Hospital Section	.....	.....	.....	24.9
Total daily average at both Sections	.....	.....	.....	113.1
Average on Rolls at 31/12/29	.....	.....	.....	132.1

The School is so popular that the demands for admission are far in excess of the accommodation. In addition to our own requirement, those of the School Medical Officer (Dr. T. S. Fulton) would easily provide pupils for at least three more schools with 200 places each. Meantime, the fact must be borne in mind that these delicate, and possibly tuberculous, children are either not receiving any education, or are in irregular attendance at the ordinary public elementary schools—a burden to themselves and a drag on the educational progress of their healthier fellow pupils.

It is gratifying to notice the commodious and well built schools which are now being erected by the Education Authority, and, in my opinion, if these were constructed on a plan which would make them easily convertible into schools of the open-air type, they would go far to foster and protect the health of school children. The school years are the most important in the whole life of an individual, and during these years the foundations of health may be either strengthened or sapped, and habits of mind and body formed which may conduce either to the happiness or the misery of the individual throughout his whole after-lifetime.

In accordance with a request from the Ministry of Home Affairs, the following particulars are set out hereunder:—

Hospitals provided by the Sanitary Authority or the
County Council.

B. Tuberculosis—

Hospitals.

1. Municipal Hospital for Tuberculous Children, Graymount, Belfast. (For the treatment of osseous tuberculosis in children) 58 beds
2. Municipal Sanatorium, Whiteabbey, Co. Antrim. (For all forms of tuberculosis in children and adults.) 285 beds

Clinics and Treatment Centres.

1. Central Tuberculosis Institute, Durham Street, Belfast.
2. Tuberculosis Institute, 225, Albertbridge Road (Branch).
3. Open-air School—Day Section—Graymount, Belfast 110 places

Artificial Light Clinics for tubercular disease.

1. At Central Tuberculosis Institute, Durham St., Belfast. }
 2. At Tuberculosis Institute, 225, Albertbridge Rd., Belfast. }
- Provided by Belfast Corporation — Tuberculosis Department.

Table 20.

NEW CASES AND MORTALITY DURING 1929.

Age—Periods	New Cases		DEATHS			
	All Forms of Tbs.		Pulmonary		Non-Pulmonary	
	M.	F.	M.	F.	M.	F.
0-4 incl.	53	24	10	6	25	14
5-9 ..	82	78	5	4	5	6
10-14 ..	57	52	2	11	6	3
15-19 ..	63	60	20	36	4	6
20-24 ..	52	87	32	44	6	7
25-34 ..	97	114	50	69	7	10
35-44 ..	57	63	34	44	2	1
45-54 ..	38	31	35	26	3	1
55 and upwards	12	12	18	16	3	2
Total ...	511	521	206	256	61	50

The ratio of non-notified tuberculosis deaths to the total tuberculosis deaths was as 1 : 3.

It is evident, therefore, that the ratio of notified tuberculosis patients to deaths from tuberculosis still leaves a good deal to be desired. It must not be assumed, however, that this lack of notification is due entirely to laxity on the part of medical practitioners attending the non-notified cases. The Regulations specifying the conditions under which a patient suffering from tuberculosis shall be notified to the Medical Officer of Health often leave the practitioner in doubt as to whether a particular case is notifiable. In my opinion, **all cases of tuberculosis should be notified** as soon as the Doctor becomes aware that the patient is suffering from the disease—in whatever form, and at whatever stage. This will be seen to be all the more desirable when Medical Benefit comes into operation, as under the recent Act the fact that an Insured Person is suffering from tuberculosis will be notified to the Tuberculosis Officer as soon as the Panel Practitioner becomes aware or suspects that the Insured Person is so suffering.

BELFAST INSURANCE COMMITTEE.

Sanatorium Benefit for Insured Persons.

The section which follows includes my report as Medical Adviser to the Belfast Insurance Committee, and the form which it takes is largely determined by the requirements of the Memorandum which the Ministry of Labour has issued for the guidance of Medical Advisers to Insurance Committees in drawing up their Annual Reports. This section covers the work done for insured persons under the contract between the Belfast Insurance Committee and the Belfast Corporation, and also for discharged soldiers whose tuberculosis was admitted as attributable to, or aggravated by war service.

Table 21.—Shows the numbers of insured and non-insured persons examined for the first time, or whose diagnosis was made definite, during the year 1929.

Year	Insured & Exempt		Total	Per cent of Grand Total	Non-Insured		Total	Per cent of Grand Total	Grand Total
	Male	Female			Male	Female			
1929	422	419	841	44%	501	577	1078	56.0%	1919

Table 22.—Shows the number of patients found on examination to be tuberculous or “suspect” requiring treatment, and the number found to be non-tuberculous.

Year	Tuberculous or Suspect				Total	Per cent of Grand Total	Non. Tuberculous				Total	Per cent Grand Total	Grand Total
	Insured		Non- Insured				Insured		Non- Insured				
	M.	F.	M.	F.			M.	F.	M.	F.			
1929	316	303	251	279	1149	60%	106	116	250	298	770	40%	1919

The grand total includes 114 “suspects” transferred in the year under review to the tuberculous or non-tuberculous class.

Table 23.—Shows the forms of tuberculosis from which new insured patients examined during the year were found to be suffering.

Year	Pulmonary		Glandular		Osseous		Abdominal		Other or General		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1929	255	239	11	16	9	11	2	4	6	2	555

Insured Patients on Treatment.

The number of Insured persons on Sanatorium Benefit treated throughout the year was 2,485. The number on Sanatorium Benefit at the end of the year, compared with previous years, is shown in the following table.

Table 24.—Shows the number of insured persons on Sanatorium Benefit at the end of the years indicated.

Year	1922	1923	1924	1925	1926	1927	1928	1929
Persons	1994	1777	1732	1740	1664	1784	1817	1909

TREATMENT OF EX-SERVICE MEMBERS.

The number of men who served in the war, examined for the first time during the year, was 58, as compared with 48 in the year 1928.

Table 25.—Shows the number of Discharged Service members on the various forms of treatment, at the dates mentioned.

Date.	Institute.	Domiciliary.	Sanatorium.	Total.
31st December, 1927	133	139	34	306
31st December, 1928	108	161	17	286
31st December, 1929	105	159	16	280

CLIMATIC CONDITIONS.

It is a matter for regret that the capital of Northern Ireland should still lack an official meteorological station, for although private observers give records of rainfall, air temperature, etc., no record is available of the hours of bright sunshine. In the absence of such a record it is impossible to say whether Belfast is better or worse off in this respect than other cities, but in an industrial city like ours the amount of sunshine which reaches the ground level must be seriously lessened by domestic and industrial smoke, thus retarding the normal growth of children, and impairing the health of the community.

I am indebted to Miss Firth, of Cavehill Road, for the following figures:—

Table 26. **Rainfall.**

Year.	Rainfall in inches.	Days on which rain fell.
1928	49.06	258
1929	42.37	237

March was the driest and August the wettest month of the year 1929.

ECONOMIC CONDITIONS.

I regret that there is very little to add to what I said in my last year's report under this heading. Belfast—especially in its staple industries, linen and shipbuilding—still continues to suffer from the economic depression and unemployment which have been so general throughout the British Isles, and which appear to have become world wide.

CHART 3.

SHOWING THE INCIDENCE OF MORTALITY FROM PULMONARY TUBERCULOSIS
ON MALES AND FEMALES IN AGE-PERIODS OF FIVE YEARS, CALCULATED PER
1,000 MALES AND FEMALES LIVING IN EACH AGE-PERIOD, FOR THE YEAR
ENDED 31st DECEMBER, 1929.

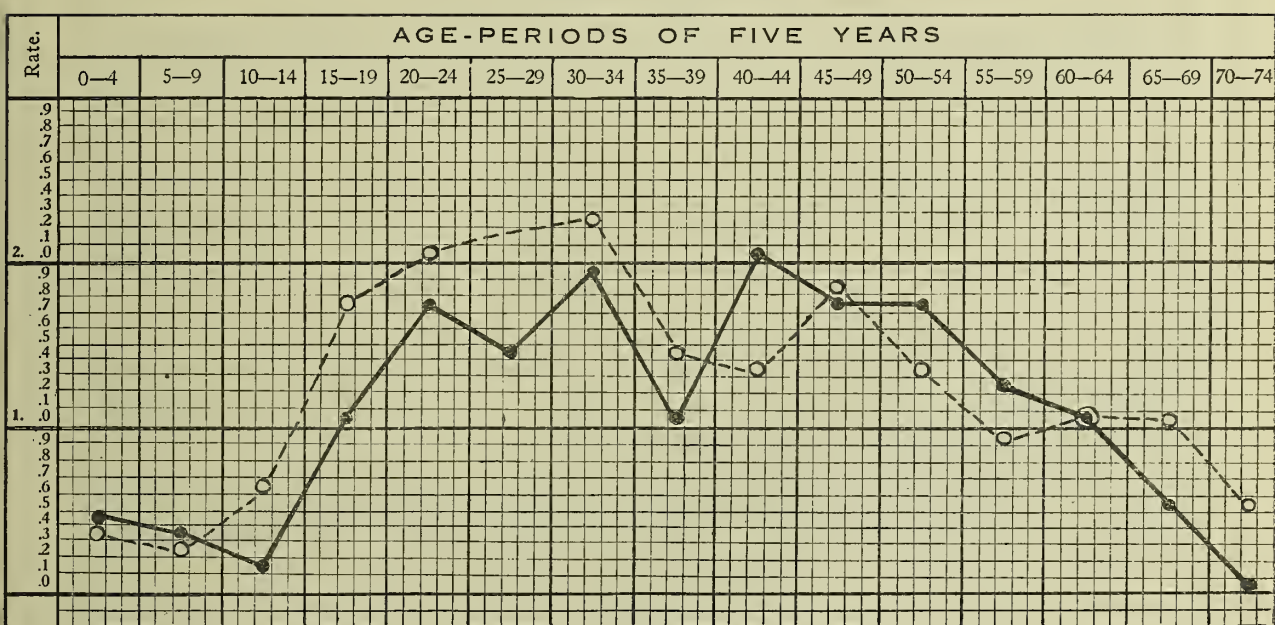
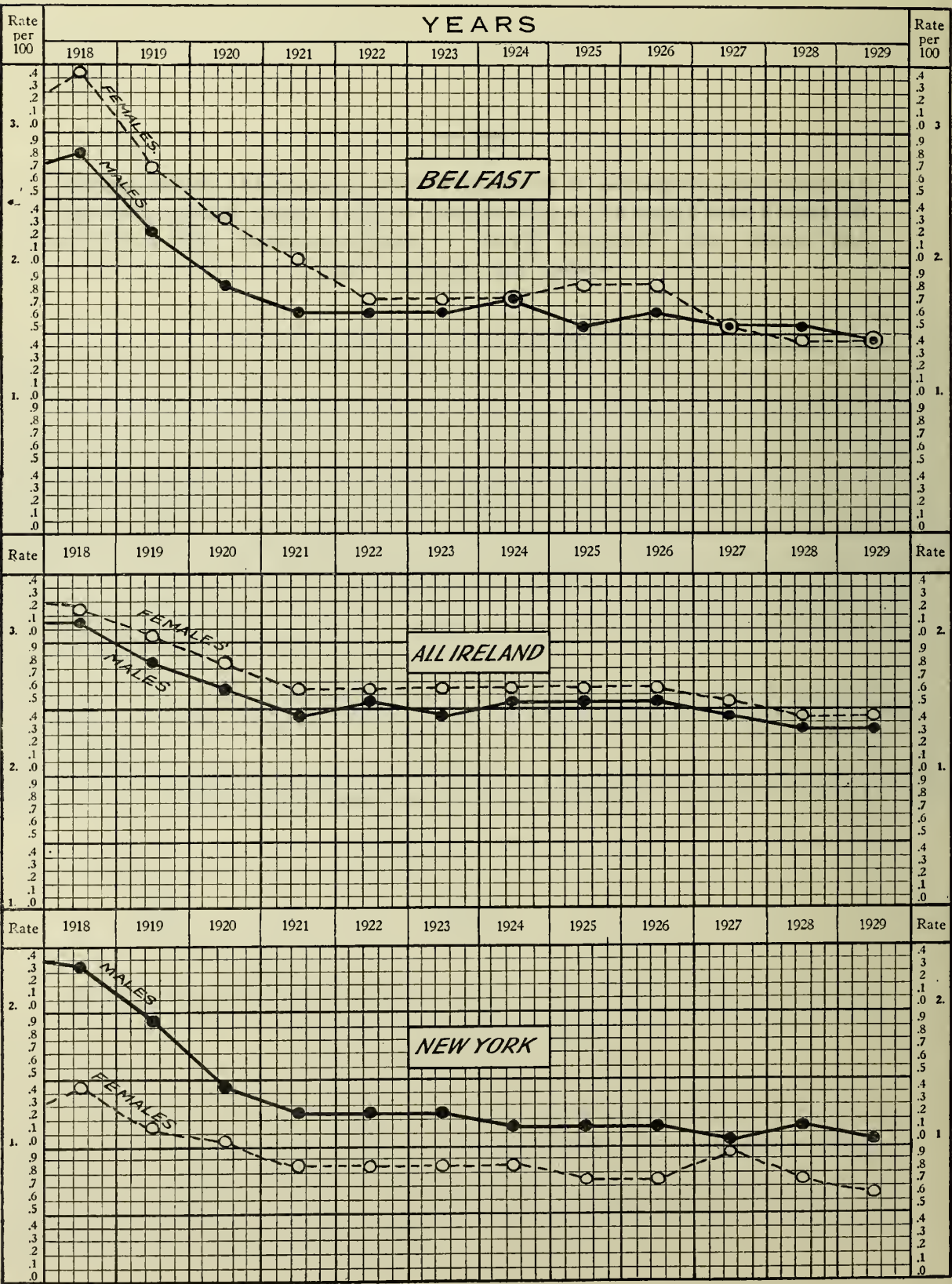


Chart 4 shows the comparative incidence of the mortality from all forms of tuberculosis amongst males and females in Belfast, Ireland, and New York. From this Chart it will be seen that in New York, as in Great Britain, the incidence of tuberculosis falls more heavily on men than on women—whereas the incidence falls more heavily on women than on men in Belfast, and in Ireland generally.

CHART 4.
SHOWS THE COMPARATIVE INCIDENCE OF THE MORTALITY FROM ALL FORMS OF TUBERCULOSIS AMONGST MALES AND FEMALES IN BELFAST, IRELAND, AND NEW YORK.



DEATHS AND DEATH RATES.

The number of deaths from pulmonary tuberculosis in 1929 was 485, as compared with 499 in 1928, and with 836 in 1914. The death rate in 1929 was 1.16 per 1,000, representing a decrease of 41 per cent as compared with the rate in 1914.

(The criticism that the fall in the number of deaths from pulmonary tuberculosis may be due to a transfer of diagnosis to, say, bronchitis, or some other chest disease, is met by the fact that the death rate from non-tubercular chest diseases has also fallen by practically the same percentage as the death rate from pulmonary tuberculosis.)

The number of deaths from non-pulmonary tuberculosis in 1929 was 97, as compared with 114 in 1928, and with 290 in 1914. The death rate from non-pulmonary tuberculosis in 1929 was 0.23 as compared with 0.72 in 1914—a decrease in the death rate from non-pulmonary tuberculosis of 68 per cent.

SUMMARY.

1. During the year, 1,805 persons notified as suffering from signs of tuberculosis in various forms were examined, as compared with 1,816 in the previous year (vide Table 1.)

2. Of the 1,805 persons examined during the year, 54 per cent. were found to be tuberculous, and 6 per cent. "suspect," while 40 per cent. were regarded as not suffering from tuberculosis.

3. The re-attendances of old patients at the Institutes for examination and treatment numbered 32,449 as compared with 32,869 in the year 1928. This, in addition to the 1,805 new patients examined, makes a total of 34,254 attendances and treatments during the year. 167 old patients were too ill to attend the Institutes and were re-examined in their own homes, and 73 were re-examined at the Belfast Infirmary, by the Staff of the Institutes. This, of course, is exclusive of the attendances on patients in their own homes by Domiciliary Doctors acting under the Scheme of the Corporation—estimated at about 60,000.

4. The numbers of patients on the various forms of treatment at the 31st December, were as follows:—

Institutes	.....	.....	.....	1875
Domiciliary	.....	.....	.....	2702
Sanatorium	.....	.....	.....	225
Graymount Hospital	.....	.....	.....	56
Graymount O.A. School	.....	.....	.....	114
Total	.....	.....	.....	<u>4972</u>

5. The number of Visits paid by the Visiting Nurses to patients in their own homes during the year was 36,470.

6. The **results of treatment** at the end of the year according to the reports received from Institute, Institutional, and Domiciliary Doctors during the year, are set out below:—

Form of Treatment.	CONDITION.					
	D.A.C.* or D.Q.	G.I.	Imp.	I.S.Q.	Worse.	Total.
In Municipal San.	6	70	102	67	6	251
Discharged Municipal Sanatorium	36	72	200	142	19	469
In Graymount Hospital	28	108	17	10	—	163
Discharged Graymount Hospital	12	—	—	3†	1	16
At Graymount Open Air School	—	9	81	37	1	128
Domiciliary Institutes	32	380	1003	1269	148	2832
	16	30	527	444	9	1026
Total	130	669	1930	1972	184	4885

*D.A.C.—Disease apparently cured.

D.Q.—Disease Quiescent.

G.I.—Greatly Improved.

Imp.—Improved.

I.S.Q.—In statu quo.

†These three patients were removed by parents against medical advice.

7. During the year 485 persons died of the pulmonary form of tuberculosis, and 97 of the non-pulmonary forms, as compared with 499 and 114 respectively in the preceding year.

8. Of the 582 persons who died from pulmonary tuberculosis during the year, 483 were patients under the care of this Department. Of these 483, 53 died within one month of their first examination by us; 166 within six months; 242, or over 41 per cent. within one year. It may be inferred from these figures that the stage at which patients are first notified is often too late to admit of effective treatment.

9. As an indication of the declining trend of the death rate from pulmonary tuberculosis, the following Table for the last twelve years may be of interest:—

Year.	No of Deaths.	Death rate per 100,000	Comparison with 1918 as 100.
1918	1051	267	100
1919	853	212	81
1920	762	184	72
1921	677	161	64
1922	624	147	59
1923	571	133	54
1924	605	139	57
1925	575	131	54
1926	570	136	54
1927	515	124	49
1928	499	120	47
1929	485	116	42

From this Table it will be seen that for every hundred persons who died of pulmonary tuberculosis in Belfast in 1918 only 42 died of that disease in 1929—a reduction in the rate, of 58 per cent.

SUGGESTIONS FOR DEVELOPMENT.

However intensive the campaign against tuberculosis, new developments are constantly suggesting themselves in the course of time. The following seem to me to be desirable, reasonable, and practical:—

1. A more intensive education of the people in matters of public and personal health, and in the prevention and cure of tuberculosis and avoidance of infection.

2. More open-air schools for delicate children, and for children in danger of developing tuberculosis through living in unhealthy home surroundings.

3. The addition to the Medical Curriculum of a course in the history, prevention, diagnosis, and methods of treatment of tuberculosis, and the means of dealing with it in the community. (Although this is a matter which lies outside of the jurisdiction of the Committee, it is one of such importance to the community that I feel compelled to give expression to so clamant a necessity).

4. The extension of accommodation for the treatment of children suffering from the non-pulmonary forms of tuberculosis. (This matter is at present under the consideration of the Committee.)

5. In view of the increasing attention being paid to newer and more delicate laboratory methods for the diagnosis of, and control of treatment in, tuberculosis, much useful work might be done along these lines—or in the discovery and development of others—if the Staff were adequately reinforced. It is not enough to diagnose tuberculosis, and to treat patients along general lines and by old-time methods. If our system is to be modern, we must move forward with the times.

* * * *

In the earnest hope that the introduction of Medical Benefit, and the re-organisation of the Public Health Department and its co-ordination with the Tuberculosis Department will lead to even better results in the years to come than in the past,

I am, Gentlemen,

Your obedient servant,



Chief Tuberculosis Officer to the Corporation, and Medical
Adviser to the Belfast Insurance Committee.

MUNICIPAL SANATORIUM, WHITEABBEY.

REPORT OF THE Medical Superintendent

MEMBERS OF THE TUBERCULOSIS COMMITTEE, 1929.

THE RIGHT HONOURABLE THE LORD MAYOR,
Councillor SIR WM. F. COATES, Bart., D.L., J.P

Councillor CAPTAIN D. C. LINDSAY
(Chairman).

Alderman JULIA M'MORDIE, C.B.E., J.P.
(Deputy Chairman).

Alderman W. H. ALEXANDER.

Alderman Dr. J. D. WILLIAMSON, J.P.

Alderman CAPTAIN REID, J.P.

Councillor W. F. CLOKEY.
Councillor W. A. COCHRANE, J.P.
Councillor SAMUEL GRAY.
Councillor J. GRIMLEY.
Councillor LT. COM. HARCOURT.

Councillor H. McALEVEY.
Councillor H. McKIBBEN.
Councillor H. McLAURIN, J.P.
Councillor C. SCOTT.
Councillor WM. SWEENEY.

Mr. K. M. ALEXANDER (F.I.A.A.).

Mr. WM. MOOREHEAD.

Mr. JAS PARKHILL, J.P.

STAFF OF THE MUNICIPAL SANATORIUM.

Medical Superintendent	.....	Percival S. Walker, M.D., B.Ch., D.P.H.
Resident Medical Officer	.....	Denis K. Waterson, M.D., B.Ch., D.P.H.
House Physician	.....	Audrey Lavelle, M.B., B.Ch.
Visiting Physician	.....	John C. Rankin, M.D., B.Ch.
Visiting Dental Surgeon	.....	Osborne Black, L.D.S.
Visiting Chaplains	.....	Rev. W. B. McMurray, B.A.
		Rev. Finlay Maguire, B.A.
		Very Rev. J. O'Neil, P.P., V.F.
Matron	.....	Miss E. Woods, S.R.N.
Steward	.....	Mr. Stewart Finlay.
Engineer	.....	Mr. Samuel McClure.

REPORT OF THE MEDICAL SUPERINTENDENT
 ON THE WORK OF
THE BELFAST MUNICIPAL SANATORIUM,
For the Year ended 31st December, 1929.

To The Medical Superintendent Officer of Health.

Sir,

I beg to submit for your consideration my Annual Report on the working of the Belfast Municipal Sanatorium for the year ended 31st December, 1929.

In order to preserve the formal continuity of the Report and to facilitate comparative reference the usual sections have been employed.

Situation.—The Sanatorium is situated about five and a half miles north of the City centre, on the southern slopes of the Belfast hills. The vista overlooks Belfast Lough, County Down, the distant coast of Scotland, the Copeland Islands, the Antrim Coast, the town of Carrickfergus, and the City of Belfast itself.

The hills, which range in a semicircle extending from the Cavehill to the Knockagh Mountain at Greenisland, shelter the Sanatorium from cold winds and render it well suited for a health resort with sea and mountain air at once mild, equable and bracing.

The grounds comprise some 33 acres of land sloping gently seawards. They have been laid out with discriminating taste and contain a profusion of rare and beautiful trees, with conservatories, walks, and terraces in which the patients take exercise and engage in such occupations as are suited to their respective recuperative powers.

The Sanatorium is arranged as a Hospital, and four pavilions centring around an Administrative Block or Nurses' Home as a nucleus. This handsome building was formerly a fine old mansion known as "The Abbey." All structures are of a permanent nature, erected with brick.

Maintenance.—The Sanatorium is maintained on a basis of combined "State-and-rate-aided," one half of the maintenance being provided by the City rates, and one half by the Ministry of Home Affairs. The question as to the financial responsibility for further extensions and new works is at present under consideration.

Accommodation.—The nominal accommodation available is at present 285 beds, distributed according to the accompanying table. The Sanatorium is equipped for the reception and treatment of cases of pulmonary and surgical disease of all ages. The average annual admission rate exceeds 500, being comprised last year of 522 patients, the composition of which number can be ascertained from Table No. 3 (under statistics).

Table No. 1.—Average Number of Beds available:—

	Pulmonary Tuberculosis		Surgical Tuberculosis	Total
	Sanatorium Beds	Hospital Beds		
Adult Males	97	26	—	
Adult Females	50	26	20	
Children	66	—	—	
Total	213	52	20	285

During the year 1929, 522 patients were admitted, illustrating all grades and forms of the various manifestations of Tuberculosis. The age periods extended from 2 years to over 60 years.

The main features ascertainable from the various tables hereunder are:—

(a) THE TYPE OF CASE admitted differs very little from that of the preceeding years, and the number of cases of advanced disease being recommended shows no signs of abatement. Young children have recently come under treatment with the disease, especially of the surgical variety, far advanced—a state of affairs which was previously comparatively unknown in this Sanatorium.

(b) THE NUMBER OF PATIENTS ADMITTED (522) is practically the same as that of last year (519), but the composition thereof indicates certain features of importance. In the first place, the total number of children admitted has fallen from 145 to 112—surely a retrograde step. It would appear that in the treatment and therapeutic education of children a most effective weapon in the campaign against Tuberculosis is available, but so far as the Sanatorium is concerned is not being utilized to the full. In the second place, the number of patients admitted suffering from the surgical types of the disease has risen to no less than 86, of whom 44 were under 14 years of age. This has necessitated a considerable remodelling of the hospital and nursing facilities available, and indeed really the inauguration of a completely equipped surgical department.

(c) THE AVERAGE DURATION OF RESIDENCE per patient was 164 days, or 15 days less than the figure of last year. Attention may be directed to a certain number of patients, principally young, who remain in residence a few days, vouchsafing various hypothetical reasons for immediate discharge. Occasionally such patients are re-admitted at later dates with rapid progress in their condition.

(d) THE NUMBER OF DEATHS occurring throughout the year was 47, 77% of whom exhibited the Bacillus Tuberculosis in the expectoration upon admission, and thus emphasised the danger of awaiting a positive bacteriological report before clinching the diagnosis or instituting active remedial Sanatorium Therapy.

ACCOMMODATION.

PATIENTS.—As already indicated in previous reports, the accommodation on the male convalescent section has been of late severely taxed, and early in 1929 was insufficient to meet demands. This insufficiency was intensified during the epidemic of Influenza in February, when the Belfast Board of Guardians were compelled to request the Corporation to remove from the City Infirmary cases of Tuberculosis in order to provide accommodation in the latter institution for influenzal victims. To meet the emergency, the Therapy Building was converted into an Open-air Pavilion capable of housing 25 patients. It is a pleasure to record that this conversion was most satisfactory and that the new pavilion is one of the most popular in the Sanatorium.

Even with this extension the male convalescent section is still overcrowded, and it has become necessary at times to provide sleeping accommodation for men in the Children's Pavilion, a procedure which can only be excused on the grounds of expediency.

Similarly the acutely ill, and the surgical sections are overcrowded: at the present time plans are under consideration as how best to cope with these difficulties. On the other hand, throughout the greater part of the year the Children's pulmonary and the convalescent female sections have not been fully occupied, and in this way a certain amount of permissible alternative accommodation was available.

Unfortunately, the convalescent pavilions, by reason of lack of culinary and other necessary annexes, are not at present suitable for the nursing of surgical and bedridden patients, and steps are being, therefore, taken to include in the financial estimates for 1930-1931 a sum of money which will permit of one pavilion being converted into a department suitable for the reception of cases of varying types.

STAFF.—To meet the housing requirements of the increased nursing staff, rendered necessary by increased numbers and more particularly by the increased proportion of bedridden and hospital cases, additional accommodation in the staff quarters was required and was found in the utilization of the rooms over the stores as nurses' bedrooms. This procedure can only be considered as a temporary expedient. As has been for some time recognised, the "Nurses' Home" is by no means an ideal structure, and falls far short of the modern conception of such a hostel. Some of the rooms occupied by nurses are unhygienic by reason of coldness and dampness, and this naturally detracts from the efficiency of the staff employable, in that the quarters are disheartening to prospective candidates for our nursing service. It is self-evident that, in order to render their best service, the nursing staffs of our institutions should be well housed. The accommodation available at the Municipal Sanatorium is now totally inadequate and must be improved if the Institution is to grow in efficiency.

STAFFING.

MEDICAL.—The personnel of the medical staff shows one change since last year. Dr. Margaret Elliott resigned her appointment in the Corporation Service in September last to take up duties in connection with the Heswell Orthopaedic Hospital in Cheshire. I should here take this opportunity of expressing my appreciation of the useful work Dr. Elliott performed whilst on duty in the Sanatorium. The vacancy occasioned by Dr. Elliott's departure was filled by the appointment of Dr. Audrey Lavelle—a graduate of the Belfast Medical School, who now acts as Assistant Medical Officer on the Medical and Children's Departments.

NURSING.—It is to be regretted that the proposition outlined in last year's report to have the Sanatorium affiliated with a general Hospital with a view towards registration under the Nursing and Midwives' Act of 1922 has not yet taken effect. Such affiliation would render the Probationer Nursing Service more attractive, in that the probationer nurses would thereby be able to proceed from the Sanatorium to a general hospital for the full curriculum required towards registration, and at the same time to obtain a remission of training in the latter hospital, instead of, as at present, having the period spent at the Sanatorium not officially recognized.

It is becoming increasingly difficult to obtain suitable candidates for the junior nursing service, as our only hope lies in the recruitment of candidates who are under the age (generally 19 years) to be received into a general hospital. Recently out of six applicants two were found to be unable to spell

their own names. Further, the question of girls of 18 years of age undertaking the nursing of advanced phthisical subjects is one open to discussion. One solution of the problem may be found in the alternative employment of additional staff nurses and of additional domestic assistance in place of probationers.

The total staff complement of the Sanatorium is now comprised as follows :

General Staff—			Open-Air School—		
Medical Superintendent	1		Teachers	2	
Assistant Medical Officers	2		Domestic Staff—		
Visiting Physician	1		Maids, etc.	22	
Visiting Chaplains	3		Engineering Staff—		
Visiting Dentist	1		Engineer	1	
			Assistant to Engineer	1	
			Boilermen	4	
Nursing Staff—			Outdoor Staff—		
Matron	1		Gardener	1	
Sisters	5		Labourers	2	
Staff Nurses	5		Vanman	1	
Probationers	20		Gate Porter	1	
			Carpenter	1	
Clerical Staff—			Assistant to Carpenter	1	
Steward	1				
Clerks	2		Total	79	
Proportion of full time officers to each ten beds					2.5
Proportion of total per 10 beds					2.77

These figures compare most favourably with those pertaining in Cross-Channel Institutions of parallel constitution.

CLASSIFICATION OF PULMONARY DISEASE AND RESULTS OF TREATMENT.

In this report the patients suffering from Pulmonary Phthisis are scheduled according to the following classification :

Class T.B. Minus—Cases in which Tubercle Bacilli have never been demonstrated in the sputum.

Class T.B. Plus—Cases in which Tubercle Bacilli have at any time been found in the sputum.

This latter Class is divided into three groups:—

Group 1—Cases with slight constitutional disturbance, if any, and in whom the obvious physical signs are of a very limited extent.

Group 2—Cases which cannot be placed in Groups 1 and 3.

Group 3—Cases with profound systematic disturbance or constitutional deterioration with marked impairment of function, and with little or no prospect of recovery.

To indicate the result of treatment the following terms are laid down:—

“ Quiescent ”—Cases which have no symptoms of tuberculosis, and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in whom the sputum, if any, is free from Tubercle Bacilli.

“Improved”—Cases short of “quiescent,” in whom the general health is fair, and the symptoms of Tuberculosis have materially diminished.

“No Material Improvement”—All other patients who are alive.

STATISTICS.

The following tables cover the period extending from 1/1/29—31/12/29.

Table No. 2—Annual Return showing the extent of treatment during year.

	In Institution 1/1/29	Admitted during year	Discharged during year	Died	In Institution 31/12/29
Number of Patients	236	522 (including 18 re-admissions)	489 (including 12 re-discharges)	47	222

Table No. 3—Annual Return showing the Numbers of Persons admitted during year, classified according to the Type of Disease (excluding 18 cases re-admitted).

Type of Case.	Men	Women	Children	Total
Pulmonary Tuberculosis	209	128	70	407
Surgical Tuberculosis	23	19	44	86
Re-classified	6	4	1	11
Total	238	151	115	504

Table No. 4—Annual Return showing the Numbers of Persons discharged during the year, classified according to type of disease (excluding 12 cases re-discharged.)

	Men	Women	Children	Total
Pulmonary Tuberculosis	182	132	90	404
Surgical Tuberculosis	14	18	32	64
Re-classified	5	3	1	9
Total	201	153	123	477

Average duration of residence per patient—164 days.

NON-TUBERCULAR PATIENTS ADMITTED.

During the year 11 cases were admitted and found to be suffering from the following complexes:—

1. Syringomyelia.
2. Cor Bovinum.
3. Impaction of Faeces.
4. Syphilis.
5. Osteitis (Hereditary Syphilis).
6. Non-union of Fracture (Specific).
7. Metallic Encephalopathy.
8. Syphilis.
9. General Paresis of the Insane.
10. Parkinsonism.
11. Parkinsonism (still under observation).

During the year 407 patients suffering from Pulmonary Tuberculosis (excluding those re-admitted and those in whom the diagnosis was not maintained) were admitted to the Sanatorium. The class and grade of the disease as manifested in these patients are indicated in the following table:—

Table No. 5.

		Men	Women	Children	Total
Pulmonary Tuberculosis	Class T.B. Minus	90	65	70	225
	Class T.B. Plus—Group 1	—	—	—	—
	Class T.B. Plus—Group 2	19	11	—	30
	Class T.B. Plus—Group 3	100	52	—	152
Total		209	128	70	407

The following Complications were noted upon admission:—

Other forms of Tuberculosis:—

a. Osseous	14	Eye Conditions	5
b. Larynx	10	Acute Abdomen	4
c. Glandular	6	Raynaud's disease	1
d. Genito-urinary	3	Empyema	1
e. Cutaneous	3	Varicose Veins	1
f. Abdominal	4	Dislocation of elbow joint	1
Spontaneous Pneumothorax	4	Dislocation of shoulder joint	1
Haemoptysis (severe)	37	Renal conditions	2
Gonorrhoea	1	Tapeworm	1
Syphilis	19	Unhealthy Naso-pharyngeal conditions	48
Pleural effusion	4	Asthma	1
Myocardial degeneration	1	Bronchitis	9
Hysteria	1	Vesical Incontinence	4
Cardic lesions	5	Chorea	1
Muscular dystrophy	1	Ischiorectal abscess	2
Facial Paralysis	1	Nasal Growth	1
Old Poliomyelitis	1	Psychoneuroses	1
Ear Conditions	5	Locomotor Ataxy	1
Gastro-duodenal conditions	2	Diabetes	4
Skin diseases	10	Parkinsonism	2
Hyperthyroidism	1		
Epilepsy (Jacksonian)	3		

It will readily be seen from the above list the varied conditions which daily present themselves for treatment in addition to the primary complex of Tuberculosis.

DISCHARGES.

During the same period 404 pulmonary patients were discharged (excluding those cases "re-discharged" and "re-classified"), and 46 died. The results of treatment are indicated in the following table (No. 6).

Table No. 6.

		Duration of Residence in Sanatorium.													
Condition upon admission	Condition upon discharge	Under 3 months			3—6 months			6—12 months			Over 12 months			Total	
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.		
Class T.B. Minus	Quiescent	1	—	—	5	2	5	3	—	4	1	—	2	23	
	Improved	14	27	16	28	20	11	21	9	24	3	4	7	184	
	N. M. Imp.	24	14	19	7	4	1	3	—	—	2	—	—	74	
	Died	2	2	2	—	—	1	2	—	—	1	—	—	10	
Class T.B. Plus Group 1	Quiescent	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Improved	—	1	—	—	1	—	—	—	—	—	—	—	2	
	N. M. Imp.	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Died	—	—	—	—	—	—	—	—	—	—	—	—	—	
Class T.B. Plus Group 2	Quiescent	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Improved	6	2	—	10	3	—	—	2	—	—	—	—	23	
	N. M. Imp.	2	3	—	—	—	—	—	—	—	—	—	—	5	
	Died	—	—	—	1	—	—	—	—	—	—	—	—	1	
Class T.B. Plus Group 3	Quiescent	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Imp.	3	1	—	3	3	—	10	6	1	2	3	—	32	
	N. M. Imp.	20	17	—	5	3	—	6	4	—	3	3	—	61	
	Died	10	6	—	6	6	—	2	4	—	1	—	—	35	
	Total	82	73	37	65	42	18	47	25	29	13	10	9	450	

The results of treatment of pulmonary cases may briefly be summarised as follows:—

23 were discharged with no active sign of tuberculosis, 241 as improved, and 140 indicated no material improvement of the total 404 discharged; the sputum examination was negative in 281 cases (including cases without sputum), and positive in 123 cases upon discharge.

When reviewed in conjunction with the type of patient admitted, these figures may be taken as quite satisfactory. It is worthy of note that of the 140 patients discharged without material improvement, 99 left the Sanatorium for various reasons within a period of three months after admission.

SURGICAL SECTION.

During the year 86 patients suffering from the various forms of the so-called "Surgical Tuberculosis" were received for treatment, of whom more than three-fifths were children. These cases present a brighter picture and outlook than those reviewed in the previous section, but nevertheless, it my duty again to call attention to the unduly high proportion of "surgical" cases, which are only brought under sanatorium or conservative treatment when all else surgical has failed, thereby reducing the patients' chances of recovery without prolonging the period of invalidism and increasing the cost per capita. The prescribing of a suitable treatment for a patient who has been in or attending a surgical hospital, etc., for several years, undergone a number of operations, and then enters the Sanatorium, is somewhat puzzling, but is one with which the Medical Staff of the Sanatorium have an intimate acquaintance. In addition to the primary disease, we have at times the superimposed complex of surgical modifications of the past.

In the following table these 86 patients are shown, scheduled according to the nature of the lesion.

Table No. 7.

	Bones & Joints	Abdominal	Glandular	Other Organs	Total
Men	13	3	5	2	23
Women	14	1	3	1	19
Children	18	15	11	—	44
Total	45	19	19	3	86

From the above table the increase in the admission rate of surgical cases will be readily seen.

During the same period 64 patients suffering from the surgical forms of the disease were discharged and one died. The immediate results of treatment are indicated in the following table.

Table No. 8.—Annual Return showing the immediate results of treatment of 64 patients suffering from the surgical forms of Tuberculosis, discharged during year.

	Duration of Residence in the Sanatorium.													
Type of disease upon admission	Condition upon Discharge	Under 3 months M. F. Ch.			3—6 months M. F. Ch.			6—12 months M. F. Ch.			Over 12 months M. F. Ch.			Total
Osseous	Quiescent	—	—	—	—	—	—	—	1	1	1	—	1	4
	Improved	1	1	—	2	1	2	1	1	—	2	1	2	14
	N. M. Imp.	1	2	—	—	—	—	—	—	1	1	1	—	6
	Died	—	—	—	—	—	—	—	—	—	—	—	—	—
Abdominal	Quiescent	—	1	—	—	—	2	1	—	4	—	—	4	12
	Improved	1	2	1	—	—	—	—	—	2	—	—	—	6
	N. M. Imp.	—	1	4	—	—	—	—	—	—	—	—	—	5
	Died	—	—	—	—	—	—	—	—	—	—	—	—	—
Glandular	Quiescent	—	—	—	—	—	—	—	—	—	—	—	—	—
	Improved	—	1	—	—	—	—	1	1	—	—	—	—	3
	N. M. Imp.	—	—	—	1	—	1	—	—	—	—	—	—	2
	Died	1	—	—	—	—	—	—	—	—	—	—	—	1
Other Organs	Quiescent	—	—	—	—	—	—	—	—	2	—	—	—	2
	Improved	—	—	—	1	—	—	—	2	3	—	1	—	7
	N. M. Imp.	—	1	2	—	—	—	—	—	—	—	—	—	3
	Died	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	4	9	7	4	1	5	3	5	13	4	3	7	65

SANOCRYSIN.

Preparations of gold have been used for many years in the treatment of pulmonary tuberculosis, and Sanocrysin (a double thiosulphate of gold and sodium) is the form commonly employed today.

The technique of administration and the reactions which follow have received attention in former reports. The large doses used two or three years ago have been replaced by smaller quantities, this being a question requiring further investigation. The spacing of the doses is another subject of paramount importance, and further, the repetition of the course once or twice may be advisable and has been tried in a few cases in the Sanatorium.

During the year 26 patients were discharged after having received this form of therapy, and at the end of the year a further 7 were undergoing a course. The following is a synopsis of the results of treatment of the cases who were discharged subsequent to treatment:—

	Men	Women	Total.
Quiescent	6	—	6
Greatly Improved	4	1	5
Improved	6	1	7
N.M.I.	4	2	6
Died	2	—	2
	22	4	26

It is hoped next year to embody in this report a schedule and synopsis of the results attained by this line of treatment since the inception of the latter some five years ago.

ARTIFICIAL PNEUMOTHORAX.

Artificial pneumothorax is employed in unilateral cases where there has been a lack of response to the usual sanatorium measures. By unilateral cases is meant cases with involvement of one lung (first choice cases) or cases with involvement of both lungs, the better lung not being involved beyond the upper third (second choice cases). Occasionally an artificial pneumothorax is induced as a palliative measure in cases of emergency, e.g., uncontrolled haemoptysis (third choice cases). It may here be remarked that the reverse procedure—removal of air from the pleural space—is employed not unfrequently in cases of spontaneous pneumothorax, which is a catastrophic occurrence where the diseased lung ruptures into the pleural space, the latter becoming progressively more distended with air.

When the treatment has been of benefit, the patients revisit to the Sanatorium after discharge in order to be “refilled”—i.e., have the collapse maintained.

It is greatly to be regretted that cases are not brought under treatment more frequently at a stage where the induction of artificial pneumothorax is advisable. During the period under review five cases were found to be suitable for this therapeutic measure.

The following is a synopsis of this form of treatment for the year:

Number of Inductions (New Cases)	5
Number of “Refills” (Old and New Cases)	151
Number of Gas Removals	2
*Number of Gas Replacements	3

(* Gas replacement is performed when fluid develops in the pleural sac with or without a coincident artificial pneumothorax, the fluid being removed and simultaneously replaced by gas.)

DENTAL DEPARTMENT.

The services of a part-time dentist surgeon are utilized at the Sanatorium for the necessary treatment of our patients. Treatment is conservative in type, and consists mainly of extractions, fillings, and scalings. There is no fund to assist in the provision of artificial dentures, but this is a matter affecting extern rather than intern treatment, and in the local general hospitals patients who wish to provide their own can do so under conditions advantageous to themselves.

The advantages of an efficient and up-to-date Dental Department attached to a Sanatorium are obvious, and the results attained in the department attached to the Municipal Sanatorium have been excellent.

The significance of a fastidious toilet of mouth, teeth and throat becomes increasingly apparent, and the immediate benefit derived from an overhaul of the masticatory apparatus is striking. The Tuberculous victim in a very large degree fights his battles on his stomach, so that it is paramount to prepare the way. This has been well illustrated in our "sanocrysin" cases, where it was early noted that the complications, sometimes most alarming, might be considerably reduced by a previous mouth-cleansing process. This now is routine, and preparatory to commencing such lines of treatment a clean bill of oral health from the visiting dental surgeon is a *sine qua non*.

From the educational point of view—and here the children benefit not least—the insistence on the routine examination by the hospital dentist and the immediate undertaking of necessary repairs or removals affords a valuable object lesson to the patient which ought not to be forgotten.

During the year 1929 the following operations have been performed by the dental surgeon:

Visits of Patients	.....	.....	410
Fillings	.....	.....	150
Extractions	.....	.....	152
Dressings	.....	.....	279
Scalings	.....	.....	11

LABORATORY.

The Routine work of the Laboratory consists mainly of the following:—

(a) **Sputum Examinations** for the presence of Tubercle Bacilli and other organisms.

(b) **Control Tests.**—These include Renal Efficiency Estimations, Blood Nuclear Estimations (Schilling's Modification of the Arneth Count), Estimations of the Erythrocytic Sedimentation rates, and White Cell Counts.

(c) **Research Work.**—Excluding that performed in connection with the newer methods of treatment and the control thereof, latterly an investigation has been commenced into the subject of the "Reactions of the Body Fluids in Tuberculosis."

It has been observed that in the Blood Nuclear Count and the Erythrocytic sedimentation rate we have parallel indices which are most helpful in diagnosis and prognosis, and it is hoped that the latest investigation will be of assistance as a collateral and confirmatory test.

(d) **Biological Examinations** and certain other especial bacteriological examinations are performed for the Sanatorium by the City Bacteriologist, to whom my best thanks are due for his careful returns and helpful encouragement.

The work performed in this department during the year under review comprised:—

1. Sputum Examinations	.....	.....	.....	521
2. Blood Nuclear Counts	.....	.....	.....	78
3. Sedimentation Estimations	.....	.....	.....	74
4. Renal Efficiency Estimations	.....	.....	.....	36
5. Wasserman Reactions (City Bacteriologist)	.....	.....	.....	320
6. Other Examinations (City Bacteriologist)	.....	.....	.....	24

X-RAY DEPARTMENT.

The X-Ray department has entailed a very considerable amount of work—work, however, which has proved an invaluable aid in the diagnosis and treatment of our patients. This applies especially to those cases undergoing especial lines of treatment, e.g., the lung immobilization cases are controlled before and after refill, etc. With reference to this important branch of our work I should like to take this opportunity of expressing my thanks to our Visiting Physician, whose co-operation in the electrotherapeutic aspect of the work—not to mention many other aspects—has been of real and lively assistance and encouragement.

I might re-iterate last year's plea—that a new apparatus for screening is urgently necessary, and I trust will be incorporated in our extension scheme.

During the year 466 skiagrams were taken of in-patients and 39 of out-patients attending for refill.

LIGHT CLINIC.

This clinic is utilized for the treatment of patients undergoing treatment in the Municipal Sanatorium.

The light is derived from five Radiant Heat Lamps and one Quartz Mercury Vapour Lamp. With the increase in our surgical cases additional sources are being devised for installation in the larger wards.

Osseous, Glandular, and sinus cases appear to do better under the General Radiant Heat baths, whilst abdominal and cutaneous cases respond exceptionally well to Ultra-Violet Radiation, combined, of course, with other forms of therapy. The application of artificial light to those suffering from tuberculosis is, in itself, only an adjunct to other rational treatment.

With this line of treatment, as with all others, it is essential that, to obtain the best results, active measures must be instituted whilst the patient is still capable of response, and it certainly is an advantage to the individual to receive Sanatorium treatment and light therapy concurrently.

During 1929 the number of patients who received light treatment was 89 and the total number of exposures 1,424.

OPEN-AIR SCHOOL.

A feature of particular value to the younger patients in the Belfast Municipal Sanatorium is that during the period they are receiving treatment they simultaneously receive such education as their conditions respectively permit. The importance of an open-air school affording the usual educational facilities to children already handicapped by disease, undergoing residential treatment in an institution, can hardly be exaggerated, and combined with suitable therapeutic measures, make an ideal arrangement for the treatment of children suffering from tuberculous disease and for those in delicate health and predisposed by environment or otherwise to infection with the Tubercle Bacillus.

The School is under the supervision of the Ministry of Education, and the Schedule is based on the lines set forth in the Ministry's Syllabus. The Staff consists of a principal teacher, assisted by a junior mistress.

The monotony of residence has been much alleviated by the varied instruction imparted, and this in itself has been a most helpful factor in actual treatment.

Owing to the increasing numbers of children suffering from the surgical forms of the disease admitted it has been necessary to make representation to the Ministry of Education regarding teaching facilities for such children as are confined to bed. These are at present accommodated in the Hospital Block, pending structural alterations to the Children's Pavilions. Arrangements have now been made whereby such children can receive some schooling during their periods of enforced recumbency, and in this respect a new aspect of our work has been opened up. At the time of writing this report 18 children were in attendance at the Hospital School.

The School is greatly indebted to Alderman Capt. Reid, who very generously presented prizes to the children. These prizes were distributed by him at the Concert held at the end of the December term.

TREATMENT.

The Treatment of Tuberculosis in its many aspects has been "milestoned" by a series of startling therapeutic discoveries, the majority of which have been consumed in their own conflagration. The year 1929 has not been so defined; the efficiently managed sanatorium is still the most important weapon we have in our contest with the *Bacillus Tuberculosis*, and which even in the absence of a "cure" puts the patient under the best therapeutic conditions, and rehabilitates him for his everyday world.

The system of treatment at the Whiteabbey Sanatorium is routine to most modern sanatoria. It consists of a sufficiently open-air life, a diet appetising and nourishing, and for suitable cases a system of rest and exercise which is carefully graduated to the individual case and which provides some interesting occupation to break the ennui inevitably associated with institutional life. As already indicated, various auxiliary therapeutic measures are employed where necessary and suitable, notably artificial pneumothorax (X-Ray controlled), Sanocrysin, and actinotherapy—the former two in cases of pulmonary disease, and the latter combined with immobilization and serotherapy in cases of surgical disease. Tuberculin, Jacobsen's Solution, Methyl Alcohol, etc., are employed where indicated. In addition for the children the open-air school presents many valuable therapeutic features in addition to the education provided, which is doubly necessary to children already handicapped for life's race.

Social Activities.—The social side of sanatorium life is well maintained, and amusements are regularly arranged through the medium of the patients' recreation committee. This committee continues to exercise its functions most harmoniously and effectively. As in previous years, the Christmas festivities were a great success, and everyone thoroughly enjoyed themselves: many gifts and donations were received from wellwishers: these are gratefully acknowledged and helped in no small degree to make the visit of Santa Claus more appreciated than ever. In this connection I should like to take this opportunity of conveying to the Chaplains the thanks of all for the Concerts and cinematograph entertainments so kindly organized by them, and for their very many kindnesses shown to patients and staff alike throughout the year.

The patients have, on the whole, been contented and happy, and the large number of letters of appreciation received from ex-patients and their friends has been, and still is, highly gratifying and encouraging.

Discipline.—The discipline in the Sanatorium continues to be most satisfactory. In this respect the powers of the recreation committee include certain responsibilities with regard to conduct in general, the idea being to generate a spirit of co-operation. The response has been most gratifying. A systematised scheme of penalties for minor offences is in operation, and in itself the automatic operation of the scheme effects the observance of regulations and time-schedules, etc. It is, I am glad to be able to report, becoming more and more rare an occurrence that a patient has to be summarily discharged for insubordination.

PREVENTION OF TUBERCULOSIS.

The two basic factors underlying this most important aspect of the campaign against Tuberculosis are the destruction of infection and the increase of resistance in the individual. These two considerations, however Utopian they may on first sight appear, go hand in hand. Those measures which are directed towards destruction of infection simultaneously tend to increase the resistance of the individual—the removal of slums and tenements, small rooms, bed ventilation, stagnant air—in other words, the establishment of suitable housing accommodation and the more vigorous application of those principles tending to “Sunlight” villages, etc., in place of dark and congested areas which concentrate infection, areas so common in our large cities and with which we are all too familiar.

In 1903 in France Grancher devised a system whereby healthy children were removed from tuberculous environments, and claimed very considerable success. This is an ideal arrangement, but it is difficult to see how it could be employed on any very extensive scale. Better it would seem to provide sufficient and suitable housing accommodation, which would permanently reduce the possibilities, or rather probabilities, of infection.

An alternative means towards prevention has been expounded in immunization against the disease, and the method receiving most attention at present is that associated with the names of Billie, Calmette, and Guérin. However, various doubts as to the value and limitations of the B.C.G. Vaccine have been raised, and the advisability of using the vaccine is still hotly debated. Some 125,000 French children have been so “immunised” during the last five years, and the reports on the subject made to the League of Nations have been on the whole somewhat favourable to the use of the vaccine. On the other hand, critical investigators in this country after animal experiment are uncompromisingly against the use of “B.C.G.” and consider there is danger of mutation from the bovine to the human type of bacillus. The whole question is still a most open one, and many years will pass before any authoritative statement on the subject can be issued.

It is highly probable that we shall at all times have to deal with the problem of Tuberculosis, despite the many press lines in heavy type quoting speakers to the contrary. It has been known from the ages and is vividly portrayed by Hippocrates (B.C. 460-376) in a wonderful clinical picture which would be difficult to surpass today. Parenthetically I may here, as a matter of interest, quote the following passage from this classical celebrity, “The physician must be able to tell the antecedents, know the present and foretell the future—must meditate these things and must have two special objects in view with regard to diseases, namely to do good and do no harm.” This advice, handed down to us from antiquity, is as true today in dealing with Tuberculosis as when uttered nearly thirty centuries ago. Progress has been made, but much requires yet to be done before we are in a position to state that we even understand the manifestations and proclivities of that protean organism discovered by Koch in 1882. **“With the methods of inspection, palpitation and percussion in use; with the microscope, stethoscope, and the X-Ray discovered and elaborated; with a knowledge of the anatomy and pathology of the times and organs which Tuberculosis attacks: with general encouragement of investigation . . . much has been done in the last half century to further our knowledge of Tuberculosis. Much remains to be done.”** (*Myers, 1927.*)

The Year's Work.—522 patients were admitted to the Sanatorium during the year, and 489 discharged. Of the latter figure 41 left the Sanatorium with the disease in a stage of quiescence—e.g., free from any evidence of active disease, or, in other words, “clinically arrested.” These patients, under fair conditions, should not again return to Sanatorium life, but rather after a period of observation subsequent to discharge be able once again to resume

their normal avocations without any apprehension. A further 264 left the Sanatorium and after careful assessment were graded "greatly improved" or "improved": a considerable number of these will be able to undertake work for a varying number of years, and will in all probability be still working when many a "healthy person" today has long passed beyond the veil. 47 patients died during the year: a very considerable proportion of these reached the Sanatorium when the ravages of the disease had rendered them impossible to nurse at home: in not a few cases death occurred within a few hours or days after admission.

Thanks.—I have been greatly aided by the very loyal assistance rendered by the whole staff of the institution. To my Medical Colleagues and to the Nursing Staff, particularly the Matron, I tender warm appreciation of their helpfulness and co-operation. The Clerical Staff have given me generous assistance, and I have to thank particularly the Steward for relieving me of much work and freely placing his services at all times at my disposal.

In conclusion may I express to you, Sir, and to the Members of the Tuberculosis Committee, my personal thanks for your continued help and encouragement in making the work of my Department at all times congenial.

I am,

Your obedient servant,

P. S. WALKER.

**MUNICIPAL HOSPITAL FOR TUBERCULOUS CHILDREN,
BELFAST.**

Report of the Visiting Surgeon.

*To the Chairman and Members of the Tuberculosis Committee, Belfast, on the
Clinical work of the Municipal Hospital for Tuberculous Children, Gray-
mount, for the year ended 31st December, 1929.*

Madame Chairman and Gentlemen,

I beg to submit my report on the Clinical Work at Graymount for the year 1929. In addition to recording the admissions and discharges for last year, I have reported upon those previously discharged, omitting any who were removed by the parents after too brief a period, and who therefore could not fairly be included in the results of treatment. I have written for and endeavoured to inspect all former patients, and sent the names of those who did not reply to the Chief Tuberculosis Officer, in order that they might be traced by the visiting nurses. A small number could not be traced, but the condition of those who did report was most encouraging. There is one point which I should like especially to emphasise, that is the difficulty in obtaining nurses. Trained Staff Nurses appear to be scarce at present, and their remuneration will probably have to be reconsidered; but it is to the service of the probationers that I wish to call your attention. Here, I believe that our difficulty will increase and that we will not be able to get a good type of girl, if any, as long as the period of service at Graymount counts nothing towards their professional training. We have lagged behind the other Children's Hospitals in this respect. They have made arrangements whereby a girl's service counts towards her general training, and have, I understand, little or no difficulty in obtaining probationers. I think it is of the utmost importance that some arrangement should be made to provide a sister tutor at Graymount and have the hospital definitely recognised as a training centre.

I wish to express to the Members of the Committee my appreciation of their kindness and my thanks for the helpfulness they have always shown me in any difficulty.

I have the honour to be

Your obedient servant,

H. P. MALCOLM,
Visiting Surgeon.

14th March, 1930.

ADMISSIONS DURING 1929.

Twenty new patients were admitted during the year, two of whom were removed by the parents after a few days.

Four patients were re-admitted after temporary transfer to other hospitals. Fifty-three patients remained in hospital on the 1st January, 1929, making a total of seventy-one patients undergoing treatment during the year.

TUBERCULOUS DISEASE.

Spine .....	.....	.....	.....	6
Hip Joint .....	.....	.....	.....	4
Knee Joint .....	.....	.....	.....	3
Ankle Joint .....	.....	.....	.....	2
Finger Bones .....	.....	.....	.....	1
Multiple Lesions .....	.....	.....	.....	4
Total				<hr/> 20

DISCHARGES.

Fifty-six patients remained in Hospital on the 1st January, 1930, and twenty-one discharges are recorded during 1929. Three of these were temporarily transferred to Purdysburn Fever Hospital suffering from diphtheria, and one to the Royal Victoria Hospital for mastoid disease, and were re-admitted to Graymount again. The true number of discharges was therefore seventeen. Two patients were removed by the parents a few days after admission, and did not come under treatment. Two others were also removed, but in one of these (180) the disease was arrested, and the other (158 and 56) was hopelessly incurable.

Spine—			
Disease arrested	.....	.....	5
Hip Joint—			
Disease arrested	.....	.....	1
Incurable	.....	.....	1
Knee Joint—			
Disease arrested	.....	.....	3
Ankle Joint—			
Disease arrested	.....	.....	2
Multiple Lesions—			
Disease arrested	.....	.....	1
On account of Phthisis		.....	1
Died	.....	.....	1
Removed by parents without treatments	.....	.....	2
			<hr/>
Total	.....		17

The details concerning patients discharged during 1929 are shown in the following tables.

SPINAL CARIES.

Reg. No.	Age on Admission	Sex	No. of Days Treated	Condition on Admission	Cause of Discharge	Deformity on Discharge
2	5 yrs	F	2950	Very advanced deformity	Disease arrested	No deformity
139	5½ yrs	M	1485	Moderate deformity	Disease arrested	No deformity
150, 97 & 127	3 yrs	M	1773	Moderate deformity	Disease arrested	Slight, No disability
164	5 yrs	F	1206	Advanced lumbar Deformity	Disease arrested	Slight, unnoticeable
180	8 yrs	M	928	Slight deformity	C.M.A. Disease arrested	Slight, negligible

HIP JOINT.

Reg. No.	Age on Admission	Sex	No. of Days Treated	Condition on Admission	Cause of Discharge	Deformity on Discharge	Joint movement on Discharge
124	5 yrs	M	1602	Rigid in slight abduction abscess	Disease arrested	Abscess healed Hip ankylosed in optimum position. No shortening	None
56 & 158	8 yrs	F	129 & 1254	Bad, with abscess and sinus	Incurable removed by parents	—	—

KNEE JOINT.

Reg. No.	Sex	Age on Admission	No. of Days Treated	Condition on Admission	Cause of Discharge	Deformity on Discharge	Joint movement on Discharge
110	M	3 yrs	1915	30° Flexion and early subluxation	Disease arrested	Knee straight, 1½" lengthening	45° movement
172	M	10 yrs	974	Synovial swelling, no deformities	Disease arrested	None	45° movement
188	M	5½ yrs	912	45° Flexion	Disease arrested	None	90° movement

ANKLE JOINT.

Reg. No.	Sex	Age on Admission	No. of Days Treated	Condition on Admission	Cause of Discharge	Deformity on Discharge	Joint Movement on Discharge
200	M	3 yrs	743	Synovial swelling, four quiescent sinuses	Disease arrested	None	Full movement
157	F	5 yrs	1225	Great swelling, ulceration and sinus formation	Disease arrested	None	None, Joint ankylosed

MULTIPLE LESIONS.

Reg. No.	Sex	Age on Admission	No. of Days Treated	Condition on Admission	Cause of Discharge	Condition on Discharge
209	M	11/12	568	Caries hand bones and lumbar abscess	Disease arrested	Healed, normal, no disability
219	F	11 yrs	56	Sacro-iliac disease and suspected phthisis	Phthisis confirmed recommended Sanatorium	Bad. Died shortly after discharge
235	M	2. 7/12	19	Caries, Spine, Cold Abscess forearm	Died from Meningitis	—
221	M	2 yrs	2	Left foot and right hand	Removed by parents	—
217	M	12 yrs	18	Knee and glands	Removed by parents	—

OPERATIONS AND ANAESTHETICS.

General Anaesthetics	.....	.....	.....	.....	3
Local Anaesthetics	.....	.....	.....	.....	12
Amputation thigh	.....	.....	.....	.....	1
Tonsillectomy	.....	.....	.....	.....	2
Drainage	.....	.....	.....	.....	1
Aspirations	.....	.....	.....	.....	11

Work carried out by Visiting Dental Surgeon:—

Treatments	.....	.....	.....	.....	209
Fillings	.....	.....	.....	.....	141
Dressings	.....	.....	.....	.....	215
Extractions	.....	.....	.....	.....	35

Summary and After History of Tuberculous Patients Discharged from
1921 to 31st December, 1929.

Reg. No.	Sex.	Age on Adm.	Number of Days treated.	Date of Discharge.	Date of last Inspection.	Situation of Disease.	Condition at last Inspection. Remarks.
5	M.	6	363	31/5/22	—	Spine	Incurable deformity. Not followed up.
34	F.	6	63	16/2/22	—	"	Died. Paralysis.
25	F.	4 2/12	671	11/7/23	1/2/30	"	Quite well. Not deformed. No disability.
14 & 48	M.	7	762	1/7/23	1/2/30	"	Quite well. No deformity. No disability.
21	M.	1 10/12	1212	21/11/24	—	"	Died in Sanatorium, Nov. 1929
43	F.	10	1005	12/11/24	15/2/30	"	Quite well. Moderate kyphosis, unnoticeable when dressed. No disability.
62	F.	15	866	12/11/24	1/2/30	"	Quite well. No deformity. No disability.
81	M.	11 9/12	401	7/5/24	1/2/30	"	Quite well. No deformity. No disability.
101	M.	6 6/12	20	6/2/24	—	"	Died. Meningitis.
35	F.	4 6/12	1223	28/4/25	22/2/30	"	Quite well. Moderate kyphos. Unnoticeable when dressed.
87	F.	14	689	21/7/25	10/3/28	"	Died January, 1929.
52 & 148	M.	2	1439	13/4/26	5/3/30*	"	*Did not report, but mother wrote to say, "perfectly well."
85 & 96	M.	3	979	4/5/26	—	"	Relapsed. Re-admitted June 1927. Still in Hospital.
49	M.	5 8/12	1569	26/6/26	31/1/30	"	Keeps well. There is marked angulation of spine. General posture is erect.
89	M.	6	1163	6/11/26	15/2/30	"	Was seriously ill 1928 with pneumonic condition, thought to be phthisis. Lungs are now well and patient greatly improved. Spine is quiescent with marked angulation, but erect general posture.
145	M.	2 6/12	200	19/8/26	—	"	Died. Meningitis.
111, 132 & 151	F.	3	1217	30/2/27	31/1/30	"	Quite well. No deformity.
93 & 149	F.	4	1405	6/9/27	15/2/30	"	Quite well.
169	F.	5 6/12	397	28/9/27	—	"	Removed by parents before disease arrested.
79 & 178	M.	4	1356 & 690	5/11/28	15/2/30	"	Quite well. Slight deformity. Unnoticeable when dressed.
97, 127 & 150	M.	3	1773	22/5/29	22/2/30	"	Quite well. Very slight angulation. No disability.
2	F.	5	2950	23/6/29	31/1/30	"	Quite well. No deformity.
139	M.	5 6/12	1485	13/9/29	—	"	Did not report. Discharged with disease arrested. No deformity.
164	F.	5	1206	17/10/29	1/2/30	"	Quite well. Deformity negligible.
180	M.	8	928	21/7/29	—	"	Removed by parents. Disease arrested.
17	F.	10 8/12	308	30/5/22	17/3/28	Hip	Quite well, full movement and no deformity in 1928. Did not report in 1929, but C.T.O. reports "Married and well."

Summary and After History—*Continued.*

Reg. No.	Sex.	Age on Adm.	Number of Days treated.	Date of Discharge.	Date of last Inspection.	Situation of Disease.	Condition at last Inspection. Remarks.
26	F.	13 11/12	128	4/1/22	—	Hip	Reported well by C.T.O. in 1928. Cannot be traced now.
56 & 158	F.	8	123 & 1254	11/9/22 & 28/9/29	—	"	Removed by parents. Re-lapsed. Re-admitted and again removed by parents in an incurable condition.
15	M.	14	272	16/4/22	1/2/30	"	Quite well with 90° flexion movement, but five inches shortening.
6	M.	11	348	16/5/22	—	"	Discharged as incurable. Died of amyloid disease.
41	M.	7	700	29/12/23	17/3/28	"	Quite well. Full movement. No deformity.
47	F.	12	571	24/9/23	1/2/30	"	Quite well. Full movement. $\frac{1}{2}$ -inch shortening. No disability.
50	F.	14	568	1/10/23	4/9/25	"	Was then quite well. Cannot now be traced.
54	F.	13 5/12	507	24/9/23	26/10/29	"	Quite well. Full movement. No disability.
69	F.	13	387	11/9/23	23/4/27	"	Was then quite well with full movement and no deformity. Married 1928. Reported well by C.T.O. 1930.
78	F.	8	76	10/4/23	—	"	Incurable deformity. No active disease. Not followed up.
30	M.	4	894	7/5/24	14/4/28	"	Quite well. Full movement. No deformity. Did not report in 1930, but C.T.O. reports: "doing well and at school."
40	M.	8 9/12	838	7/5/24	1/2/30	"	Quite well. Full movement. $1\frac{1}{2}$ -inches shortening due to lack of growth. Walks normally with raised heel.
66	F.	8	781	3/9/24	1/2/30	"	Quite well. Full movement. No disability.
57	F.	9	1283	25/11/25	14/4/28	"	Quite well. Hip ankylosed in slight flexion and slight adduction with $\frac{1}{2}$ -inch shortening. Did not report in 1930.
84	M.	8	766	4/8/25	15/2/30	"	Quite well. Full movement. No shortening.
76	M.	10	1009	1/8/25	15/2/30	"	Quite well, but hip ankylosed in adduction with 2 inches apparent shortening. No real shortening.
109	F.	11	526	3/11/25	—	"	Cannot be traced. Discharged with full movement and no disability.
108	F.	11	430	12/8/25	—	"	Hip kept well. Died January, 1927. Acute appendicitis.
90	M.	7	916	13/4/26	15/2/30	"	Quite well. Full movement. No shortening.
117 & 155	F.	11 4/12	544	13/4/26	15/2/30	"	Quite well. Full movement. No shortening.
27	F.	13 2/12	2225	6/10/27	15/2/30	"	Quite well. Sinus broke down since discharge, but has healed again. $1\frac{1}{2}$ inches shortening, without dislocation. 30° movement.

Summary and After History—Continued.

Reg. No.	Sex.	Age on Adm.	Number of Days treated.	Date of Discharge.	Date of last Inspection.	Situation of Disease.	Condition at last Inspection. Remarks.
58	M.	5	2366	14/12/28	15/2/30	Hip	Quite well. Hip ankylosed in slight flexion with 1 inch shortening. One sinus still open.
116	F.	7 6/12	1430	16/9/28	15/2/30	"	Quite well. Hip ankylosed in optimum position with 1½ inches shortening.
119	F.	9	1334	25/7/28	15/2/30	"	Quite well. Hip ankylosed in optimum position with ¾-inch shortening.
182 & 168	F.	3 9/12	70 & 503	19/5/28	22/2/30	"	Quite well. Full movement. No shortening.
196	M.	8	87	5/2/28	—	"	Removed by parents before treatment could be effective.
204	F.	6	20	13/2/28	—	"	Removed by parents.
208	F.	12	6	1/6/28	—	"	Removed by parents.
124	M.	5	1602	7/6/29	31/1/30	"	Quite well. Hip ankylosed in optimum position. No shortening.
7 & 72	F.	11 9/12	300 & 1547	24/12/26	1/2/30	Knee	Quite well. 30° movement.
4	M.	13 6/12	681	14/4/23	1/2/30	"	Knee ankylosed in straight position with 3 inches shortening. Sinus still open.
18	M.	15 6/12	803	8/10/23	29/1/30	"	Quite well. Ankylosed in straight position.
22	M.	2 9/12	540	25/2/23	—	"	Did not report. C.T.O. reports "well" in 1930.
28	M.	5 5/12	603	5/6/23	—	"	Did not report. C.T.O. reports "well" in 1930.
67	F.	15	526	29/12/23	1/2/30	"	Quite well. Full movement.
70	F.	12	485	29/12/23	1/2/30	"	Quite well. Full movement.
37	F.	15 9/12	1013	8/10/24	1/2/30	"	Knee quite well. Stiff in straight position.
16	M.	5	1474	21/7/25	15/2/30	"	Quite well. 45° movement, but 4 inches shortening due to lack of growth.
73	F.	6 9/12	1026	21/7/25	23/4/27	"	Did not report nor reply. Was well in 1927.
7 & 72	F.	12	1847	24/12/26	15/2/30	"	Quite well.
112 & 140	M.	4 5/12	735	13/9/26	15/2/30	"	Quite well. 90° movement. ½ inch lengthening.
104 & 138	M.	4	1356	5/12/27	—	"	Did not report. Discharged with disease arrested.
80	F.	2 6/12	1690	5/12/27	15/2/30	"	Quite well. Knee stiff in extension. No shortening.
71 & 141	M.	3 5/12	1896	23/11/27	22/2/30	"	Quite well. Knee stiff in extension. No shortening.
42, 135 & 154	M.	5	730, 194 & 123	25/7/28	15/2/30	"	Quite well. Knee stiff in extension. No shortening.
171	M.	5 9/12	820	13/12/28	31/1/30	"	Quite well. Full movement.
45 & 177	M.	5 6/12	2678	13/12/28	31/1/30	"	Quite well. Knee stiff in extension.
82	F.	7	1978	28/10/28	15/2/30	"	Quite well. A little movement and ¾-inch shortening.
203	F.	6	327	3/12/28	—	"	Died of meningitis.

Summary and After History—Continued.

Reg. No.	Sex.	Age on Adm.	Number of Days treated.	Date of Discharge.	Date of last Inspection.	Situation of Disease.	Condition at last inspection. Remarks.
110	M.	3	1915	26/8/29	31/1/30	Knee	Knee keeping well, 1½ inches lengthening. Suffering from malnutrition. Recommended for Sanatorium.
172	M.	10	974	16/5/29	31/1/30	„	Quite well. Knee stiff in extension.
188	M.	5 6/12	912	25/11/29	22/2/30	„	Quite well. Almost full movement.
1	F.	6	321	12/4/22	1/2/30	Great toe	Quite well.
3	F.	6	466	11/9/22	15/2/30	Great toe & metatarsal	Quite well.
11	F.	6 11/12	814	15/9/23	Feb., 1930	Great toe & Os calcis	C.T.O. reports, "well and at work."
77	M.	9	429	29/12/23	Feb., 1930	Great toe	C.T.O. reports, "well and at work."
59	M.	13 9/12	1034	21/4/25	5/2/30	All bones of left foot	Cured by amputation. Has kept quite well.
86 & 166	F.	2	867	31/12/26	—	Astragalus	Discharged cured and emigrated to Australia.
122	M.	6	445	2/3/26	15/2/30	Great toe	Disease remains cured, but toe is deformed.
128	F.	11	455	29/7/26	19/4/28	Great toe	Quite well at last inspection. Did not report in 1930.
114	M.	3 8/12	962	26/5/27	—	Tarsus	Left City. Could not be traced. Discharged with disease arrested.
126	M.	11	126	2/5/27	15/2/30	Os calcis	Quite well.
19	F.	4	1191	15/10/24	Feb., 1930	Ankle	C.T.O. reports, "doing well."
53 & 152	F.	4	893 & 505	29/8/27	1/2/30	Ankle	Quite well. Full movement.
120	F.	6 8/12	756	14/12/26	—	Ankle	Discharged with disease arrested. Left City and could not be traced.
133	F.	3	417	13/9/26	17/3/28	Ankle	Quite well. Full movement. Did not report in 1930.
53 & 152	F.	4	894 & 536	29/8/27	1/2/30	Ankle	Quite well. Full movement.
115	F.	9	1067	29/8/27	15/2/30	Ankle	Quite well. Full movement.
200	M.	3	743	20/12/29	22/2/30	Ankle	Quite well. Full movement.
157	F.	5	1225	28/1/29	1/2/30	Ankle	Quite well. Ankle ankylosed at right angle.
75	M.	8	353	1/10/23	1/2/30	Elbow	Quite well. Almost full movement.
137	M.	2	468	16/11/26	15/2/30	metacarpal and finger	Quite well.
12	F.	13	363	31/5/22	29/5/26	Glands	Quite well. Now reported married and left City.
32	M.	10	125	12/4/22	6/2/30	Glands	C.T.O. reports, "well."
51	M.	11	240	11/11/22	1930	Multiple Femur & Radius	C.T.O. reports "working and not complaining."
23	M.	3 11/12	655	27/6/23	—	„	Died 22/4/26 of "stomach trouble."
83	M.	10	505	8/10/24	1/2/30	Multiple Os calcis Tibia Cuboid	Quite well. Working, coach building.

Summary and After History—Continued.

Reg. No.	Sex.	Age on Adm.	Number of Days treated.	Date of Discharge.	Date of last Inspection.	Situation of Disease.	Condition at last inspection. Remarks.
106	F.	12 6/12	635	25/11/25	15/2/30	Multiple, Hip and Glands	Hip well, full movement, $\frac{1}{2}$ -inch shortening. Glands normal.
10	F.	8	1894	31/8/26	22/2/30	Multiple, Hip, Spine, Finger, Skin	Quite well. Full movement of hip with 2 inches shortening. No deformity of spine.
129	F.	1 11/12	560	16/11/26	—	Multiple, Glands & Fingers.	Discharged 'disease arrested.' Could not be traced.
136	M.	9 6/12	240	16/11/26	15/2/30	Multiple, Glands, Aankle	Quite well. Full movement in ankle.
44	F.	13	2050	6/10/27	15/2/30	Multiple, Spine, Hip, Pleurisy	Quite well. Full hip movement with no shortening. No deformity of spine. Married six months.
187	M.	3 5/12	219	13/12/27	—	Multiple, Spine. Peritoneum	Died.
31	F.	13	2135	6/10/27	15/2/30	Multiple, Knee and Spine	Quite well. Knee ankylosed in extension. Moderate deformity of spine. General posture is erect.
33	M.	6	2345	19/5/28	15/2/30	Multiple, Rib. Hip	Quite well. Hip ankylosed in optimum position with $\frac{1}{2}$ -in. shortening.
183	M.	8	379	27/9/28	15/2/30	Multiple. Knee and congenital disease.	Quite well. No deformity. Knee stiff.
189	F.	5 6/12	358	24/5/28	—	Multiple, Hip and Peritoneum	Died.
195	M.	4	454	31/12/28	15/2/30	Multiple, Both great toes.	Quite well.
185	F.	11	358	19/5/28	31/1/30	Multiple, Finger, Thigh.	Quite well.
209	M.	11/12	568	20/12/29	—	Multiple, Fingers, Lumbar abscess.	Disease arrested.
219	F.	11	56	5/2/29	—	Multiple, Sacro-iliac Phthisis	Died shortly after discharge.
235	M.	2 7/12	19	21/9/29	—	Multiple, Spine and Forearm	Died Meningitis.
105	F.	7 5/12	168	22/8/24	31/1/30	Prepatellar bursae	Quite well.
95	F.	14	579	31/12/24	17/3/28	Sacro-iliac	Feb., 1930, C.T.O. reports, "at work and doing well."
99	M.	11	229	3/9/24	1/2/30	Rib	Quite well.
24	M.	1 10/12	252	1/10/23	1/8/25	Tibia	Then quite well. Could not be traced later.

Analysis of Tuberculous Patients Discharged between 1921 and 1930.

Site of Disease.	Disease Arrested.	Improved.	Unimproved	Relapsed.	Died.	Total.	Remarks.
Spine	16		1	2*	5	24	* One re-admitted and doing well. * One improving as out patient.
Hip	23	1	3			27	
Knee	21	1			1	23	
Foot Bones	10					10	
Ankle	8					8	
Glands	2					2	
Multiple	13				5	18	
Bursae	1					1	
Ribs	1					1	
Tibia	1					1	
Elbow	1					1	
Hand	1					1	
Sacro-iliac	1					1	
	99	2	4	2	11	118	

Analysis of Cases Discharged as Cured.

Discharged as Cured.	Are known to be well after a lapse of:—								
	Under 1 year.	Between 1 and 2 years.	Between 2 and 3 years.	Between 3 and 4 years.	Between 4 and 5 years.	Between 5 and 6 years.	Between 6 and 7 years.	Between 7 and 8 years.	
Spine	3	1	2	2	1	3	2	—	Two discharged in 1929 have not reported.
Hip	1	3	1	2	3	3	4	2	One not traced. One well for two years, then died of appendicitis. Two lost sight of after remaining well for two and six years respectively.
Knee	2	4	2	2	1	1	6	—	One not traced. One well for eighteen months then lost. One admitted to Abbey Sanatorium suffering from malnutrition.
Foot Bones	—	—	1	1	1	—	2	2	One emigrated after discharge. One was well for 14 years then lost sight of. One was not traced.
Ankle	2	—	3	1	—	1	—	—	One not traced.
Glands	—	—	—	—	—	—	—	1	One was well for four years then lost sight of.
Multiple	1	4	2	2	1	1	—	1	One not traced.
Bursae	—	—	—	—	—	1	—	—	
Ribs	—	—	—	—	—	1	—	—	
Tibia	—	—	—	—	—	—	—	—	
Elbow	—	—	—	—	—	—	1	—	Well for two years, then lost sight of.
Hand	—	—	—	1	—	—	—	—	
Sacro-iliac	—	—	—	—	—	1	—	—	
Total	9	12	11	11	7	12	15	6	16

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